Instruction Manual
for the
Expert Model 830 ESP
Embroidery Machines

1. NOTES TO USERS

(1) Static-electricity shock may damage embroidery machine AD830. So, always touch an other grounded metal substrate before operating the machine.

(2) When moving the embroidery machine, hold at the right and left dents in the base by both hands and move the machine by two men or more. Otherwise, you may drop the embroidery machine, resulting in personal injury and/or damage to the machine. Avoid moving the machine by holding at the flywheel, which may cause failures of the machine.

(3) Avoid placing an obstacle within the range subject to movement of the embroidery hoop. Otherwise, the embroidery hoop may be damaged by crushing to the obstacle.

(4) Place the embroidery machine horizontally on a stable, flat base. Otherwise, the machine may drop, resulting in personal injury and/or damage to the machine or unnecessary noise and/or vibration be generated.

(5) Always connect the power plug to a receptacle connected to the ground. Be sure to use the line voltage shown below to avoid failures or wrong operations.

U.S.A. : 100 to 120 VAC (single phase), 50/60 Hz

U.K. and Australia: 200 to 240 VAC (single phase), 50/60 Hz

Upon turning power on, the needle may move up and down once. So, never place your fingers under the needle when turning power on in order to prevent personal injury.

(6) Always turn power off before needle replacement, adjustment, cleaning, lubrication or repair. Otherwise, sudden operation of the machine may cause personal injury.

(7) Be careful not to place your fingers under the needle so as to avoid personal injury.

(8) Never insert your hands, fingers or other foreign matter like a screwdriver to places shown by arrows in Fig. 1.2 to avoid personal injury or failures of the machine.

① Embroidery hoop driving mechanism : Arrows A and B

② Opening on the reverse of arm cover: Arrow C

③ Needle operation area : Arrow D

(9) Keep your hands off the table during embroidering to avoid personal injury.

(10) When an abnormality occurs, it is dangerous to continue the operation. Press the Emergency Stop switch to stop the embroidery machine. The pattern may deviate when embroidering is restarted after an emergency stop.

If the power switch is turned on with the emergency stop switch maintained on, operation is disabled. Always clear the emergency stop and then turn power on.

(11) Avoid dropping or giving shocks to the embroidery machine to prevent failures.

(12) When the thread is broken during embroidering, take the necessary action referring to the trouble shooting procedure explained on page 98.

(13) When a power failure occurs during operation of the machine, disconnect the power plug. The machine can be restarted from the status upon occurrence of within 2 weeks from the power failure. In this case, be careful since displacement of the embroidery hoop is possible.
Return the needle 2 or 3 stitches from the stopping position, correct the embroidery hoop position using the position keys and restart the machine. (Restarting within 2 weeks is guaranteed when no expansion memory boards are installed.)

(14) When closing the face plate, be careful not to pinch the needle thread by the face plate magnet. Otherwise, thread breakage will occur.

(15) Be careful not to spoil or spray water to the embroidery machine to avoid failures.

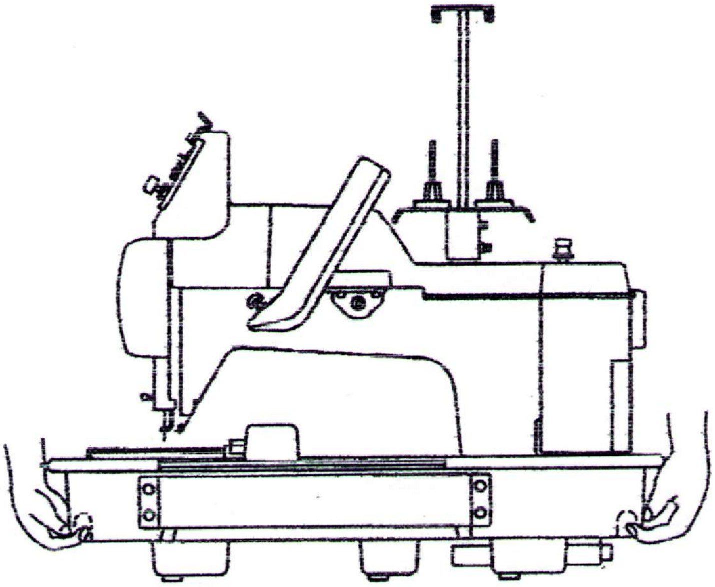


Fig. 1.1 Holding the embroidery machine

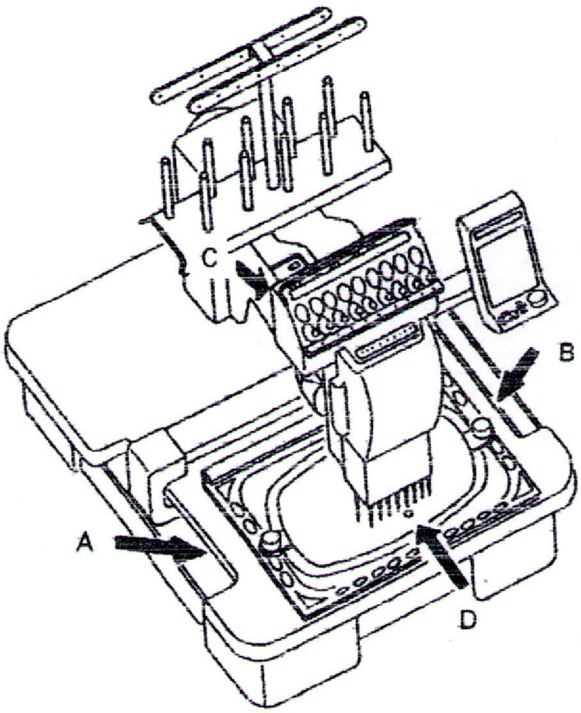


Fig. 1.2 Top view

2. CONTENTS

1. NOTES TO USERS .... P. 1

2. CONTENTS .... P. 4

3. INTRODUCTION .... P. 5

4. MAIN SPECIFICATIONS .... P. 6

5. COMPONENT NAMES AND FUNCTIONS .... P. 7

6. INSTALLATION P.15

7. OPERATION PROCEDURE P.16

   1) Preparation P.16

   2) Embroidering Operation P.28

   3) Operation Procedures of Control Box P.29

8. MAINTENANCE P.91

   1) Cleaning P.91

   2) Lubrication P.93

9. TROUBLESHOOTING P.95

   1) Error Messages and Action P.95

   2) Troubleshooting P.99

10. ACCESSORIES AND OPTIONS P.101

11. SETUP CHANGE P.103

12. GLOSSARY (Details of *) P.105

3. INTRODUCTION

- This embroidery machine is always used in combination with AMC388 (editor) (*1), AMC382 (digitizing system) (*2) or AMC330 (disc reader) (*3). The machine does not function correctly when used in other combinations.
- For safe operation and to obtain the best results from the high-performance of the embroidery machine, read this manual carefully to ensure correct use. Wrong use may result in personal injury or failures of the machine. We are not in the position to any liabilities for personal injury or failures caused by wrong use.
- Automatic embroidery for a wide range of designs from monogramming to multi-color patterns
- Possible rotation or inversion of patterns
- Automatic needle bar change and thread trimming using the program preset function. Automatic color change of up to 9 colors
- Compact size
- Easy-to-operate, centralized touch-sensitive key control panel
- Easy positioning of embroidery hoop using the centering function (*4)
- Backup function for saving embroidery data set before turning power off up to 2 weeks
  (This function is effective when the number of embroidery data is 100,000 or less and no extension memory boards are installed.)
- Possible cap (*5), code (*6) and boring (*7) embroidering by installing options

4. MAIN SPECIFICATIONS

Number of needles : 9 needles

Thread trimming : Automatic thread trimming

Stitching speed : Normal rotational speed:

800 spm (with stitch width under 2.4 mm)

- Maximum rotational speed:

For flat hoop embroidering

Embroidery range	Rotational speed
0 to 2.4 mm	1000 spm
2.5 to 3.9 mm	700 spm
4.0 to 6.4 mm	600 spm
6.5 to 8.9 mm	500 spm
9.0 to 12.7 mm	450 spm

For cap hoop embroidering

Embroidery range	Rotational speed
0 to 2.4 mm	700 spm
2.5 to 3.9 mm	600 spm
4.0 to 6.4 mm	500 spm
6.5 to 8.9 mm	400 spm
9.0 to 12.7 mm	350 spm

- Minimum rotational speed: 100 spm

Embroidery hoop range : Maximum: 458 mm (Width)×297 mm (Depth)

(When limit detection valid (*8) is activated
448×288 mm (W×D), default at shipment)

Thread breakage detection (*8) : Automatic stop upon detection of upper thread breakage
Automatic stop upon detection of bobbin thread breakage

Winding of bobbin thread : Quick winding during embroidering or stopping

Weight : 73.5 kg

Outside dimensions : 670×765×800 mm (Width×Length×Height)

Power source and power consumption:

- Japan or U.S.A.:
  100 to 120 VAC (single phase), 50/60 Hz Max. 320 kW
- U.K. or Australia:
  200 to 240 VAC (single phase), 50/60 Hz Max. 320 kW

5. COMPONENT NAMES AND FUNCTIONS

(1) Embroidery machine

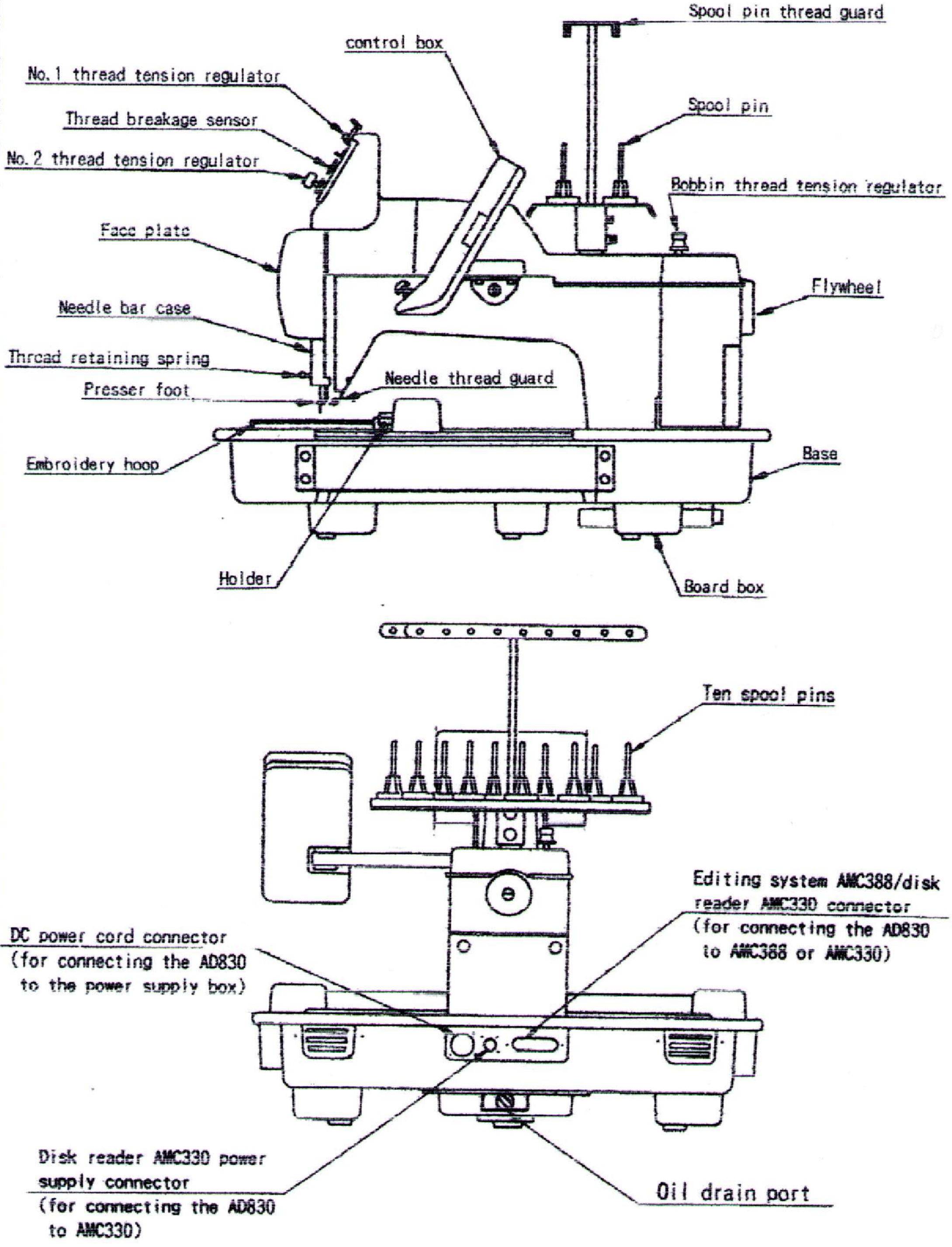

Spool pin thread guard
control box
No.1 thread tension regulator
Spool pin
Thread breakage sensor
No.2 thread tension regulator
Bobbin thread tension regulator
Face plate
Flywheel
Needle bar case
Thread retaining spring
Needle thread guard
Presser foot
Embroidery hoop
Base
Holder
Board box
Ten spool pins
Editing system AMC388/disk reader AMC330 connector
(for connecting the AD830 to AMC388 or AMC330)
DC power cord connector
(for connecting the AD830 to the power supply box)
Disk reader AMC330 power supply connector
(for connecting the AD830 to AMC330)
Oil drain port

Fig. 5.1 Side view and rear view

(2) Power supply box

	Country	Voltage	Name plate	Fuse	Power cord
1	U.S.A	100 ~120 VAC	INPUT: 100-120 V ~ 50/60 Hz FUSE: 5A OUTPUT: 5V 3A 24V 14A AISIN SEIKI CO., LTD.	5A (Time-lag) 125V	2161018-362 Black
2	U.K.	200 ~240 VAC	TYPE: PW240 INPUT: 220-240 V ~ 50/60 Hz 320W FUSE: 3.15A OUTPUT: 5V⎓3A 24V⎓14A AISIN SEIKI CO., LTD.	3.15A (Time-lag) 250V	2161028-362 Gray
	Australia				2161048-362 Gray

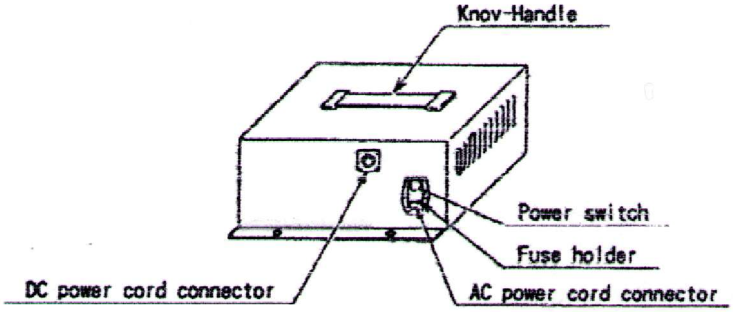
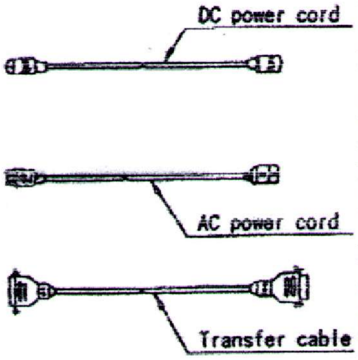

Knov-Handle
Power switch
Fuse holder
DC power cord connector
AC power cord connector

Fig. 5.2

(3) Other components


DC power cord
AC power cord
Transfer cable

Types of AC Power Cord

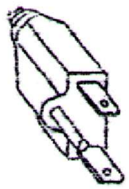
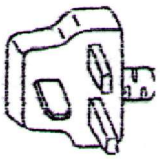
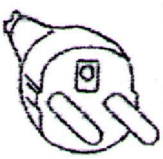
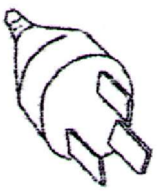
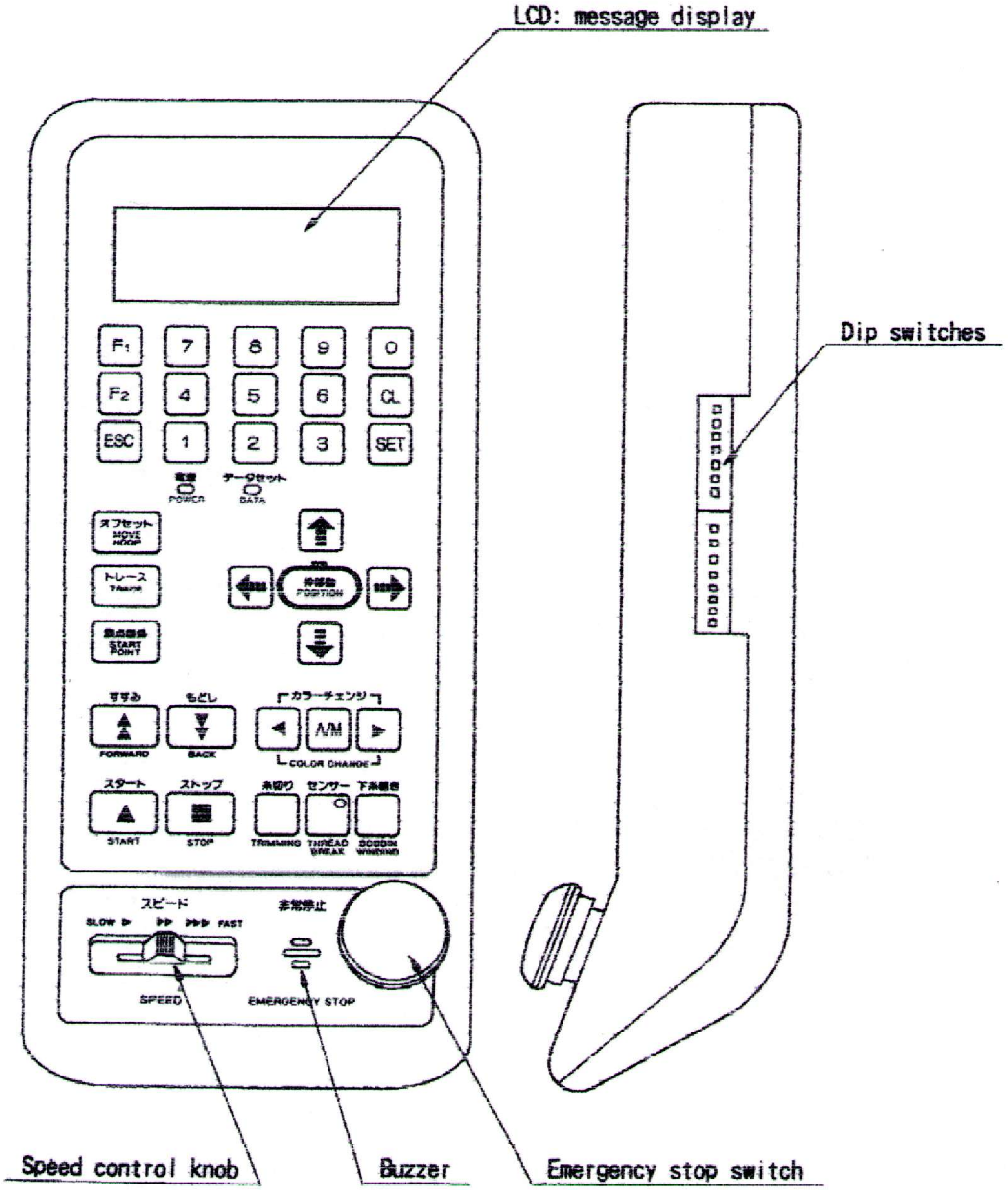
			
For U.S.A. 2161018-362	For U.K. 2161028-362	For Europe 2161038-362	For Australia 2161048-362

Fig. 5.3

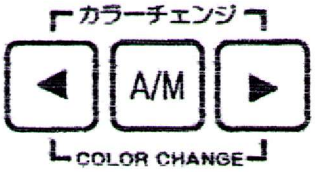
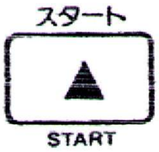
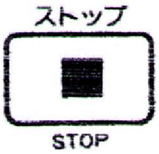
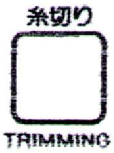
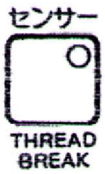
(4) Operation panel display and key function

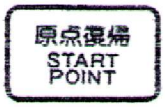
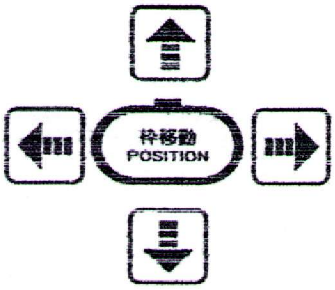
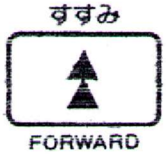
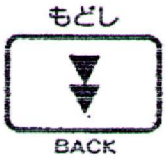
Orientation of control panel and key/switch functions The locations of keys, switches and LCD of the control panel are shown in Fig. 5.4 and their functions are explained on the following pages.


LCD: message display
Dip switches
F1
7
8
9
0
F2
4
5
6
CL
ESC
1
2
3
SET
電源
POWER
データセット
DATA
オフセット
MOVE HOOP
トレース
TRACE
原点復帰
START POINT
枠移動
POSITION
すすみ
FORWARD
もどし
BACK
カラーチェンジ
A/M
COLOR CHANGE
スタート
START
ストップ
STOP
糸切り
TRIMMING
センサー
THREAD BREAK
下糸巻き
BOBBIN WINDING
スピード
SLOW
FAST
SPEED
非常停止
EMERGENCY STOP
Speed control knob
Buzzer
Emergency stop switch

[Caution] Do not push or scratch the panel surface with a sharp-pointed item as it may cause a fault.

Fig. 5.4 Appearance of control panel Key/Switch Functions

Key/switch	Function
	• This key is used to select a desired needle bar in the direction of the arrow. • Holding the key down continuously changes the needle bars. **Note: The needle bar number currently selected appears on the LCD screen.**
	• This key is used to start embroidering.
	• This key is used to stop embroidering. • This key is used to clear alarm mode (except emergency stop). • This key is used to stop thread forward/back operation **NOTE: During the embroidery operation, pressing the stop key does not stop operation when and after three stitches before automatic color change or stop points.**
	• This key is used to trim thread. **NOTE: As the needle moves one stroke to cut the thread, be sure to keep your fingers clear of it when pressing the key.**
	• This key is used to turn the upper thread breakage function ON-OFF. **NOTE: LED in the sensor key lights up when the sensor is turned ON and lights off when the sensor is turned OFF.**

Key/switch	Function
	• The embroidery hoop automatically returns to the starting point and the embroidery machine is ready to embroider the same pattern again.
	• This key is used to move the embroidery hoop in the directions of arrows. This key is also used for moving the blinking cursor in the LCD or making a setting.
	• This key is used to advance the embroidery hoop according to data without moving the machine. • At 1 stitch setting: Pressing the key once forwards the hoop by 1 stitch. Holding the key down for 1 second or more forwards the hoop continuously. The hoop, however, stops at the color change point. • At color change setting: The hoop quickly moves to the next color change point. (The feed unit refers to a specific condition of the forward and back operation.)
	• This key is used to back the embroidery hoop according to data without moving the machine. • At 1 stitch setting: Pressing the key once backs the hoop by 1 stitch. Holding the key down for 1 second or more backs the hoop continuously. Press Stop key to stop the back operation. The hoop, however, stops at the color change point. • At color change setting: The hoop quickly moves to the preceding color change point. (The feed unit refers to a specific condition of the forward and back operation.)

Key/switch	Function
A/M	・This key is used to select the auto mode, where needle bars are changed automatically and sequentially during embroidering according to color change data, or the manual mode, where the machine halts for manual selection of a needle bar according to color change data.
7 8 9 0 4 5 6 1 2 3	・These numeric keys are used to enter embroidery data or needle bar numbers for automatic needle bar changing.
CL	・This key is used to clear embroidery data or settings entered using numeric keys. (The default values refer to the set values of the machine at shipment.)
SET	・This key is used to read the data from Disk Reader AMC330. ・This key is used to enter the setting in various setup modes.
オフセット MOVE HOOP	・This key is used to move the hoop to the preset position. ・This key is used to move the hoop to the initial poisition from the save position.

Key/switch	Function
トレース TRACE	• This key is used to move alone the rectangle surrounding embroidery data. • This key is also used for checking possible interference between the hoop and needle. (*4)
電源 ○ POWER	• The lamp comes on when the AD830 power is turned on and a single tone is activated. • An error message appears in the LCD message column when an error occurs. the lamp flashes and an alarm sound is activated.
データセット ○ DATA	• The lamp flashes when embroidery data is being sent from editing system AMC388 or disk reader AMC330 to embroidery machine AD830. It turns off when the data has been set.
F_1	• Pressing this key indicates the color change or forward/back menu. ****** F1 MENU ***** (1) COLOR CHANGE (2) FORWARD/BACK
F_2	• Pressing this key indicates the centering or interference check function. embroidery rotation/inversion or repeated embroidery menu. ****** F2 MENU ***** (1) HOOP (2) ROTATE/MIRROR (3) REPEAT

Key/switch	Function
ESC	• Pressing this key returns to the preceding menu.
下糸巻き BOBBIN WINDING	• This key is used to wind thread onto the bobbin set to the bobbin thread winder. When winding is complete, winding operation automatically stops. Press the key a second time to stop winding halfway. (Winding also stops automatically after 60 seconds.)
Speed adjusting knob	• This key is used to adjust the embroidering speed between 100 and 1,000 rpm. Moving the knob toward the right increases the speed. The speed range when cap hoop is installed is between 100 and 700 rpm. The current speed is indicated on the bottom right of the LCD screen. **NOTE: Maximum speed varies according to the data.**
Buzzer	• The buzzer notifies an error by intermittent tones. • It also sounds to notify acceptance of a key input. • It generates three single tones upon completion of embroidering or at the end point.
Emergency Stop switch	• Pressing this switch stops the machine immediately and indicates an alarm (by turning the lamp on and activating an alarm tone). • To restart embroidering, turn Emergency Stop switch clockwise to clear the alarm mode and then press Start key. **NOTE: When the switch is pressed during embroidering or movement of the hoop, pattern deviation may occur after restart.**

6. INSTALLATION

1. Wiring

(1) Insert plug ② of transfer cable ① all the way into connector ③ of the embroidery machine. Secure the plug by tightening two screws ④ on both sides of the plug ②.

(2) Insert plug ⑥ of DC power cord ⑤ all the way into connector ⑦ of the embroidery machine. Secure the plug ⑥ by turning the outer casing.

(3) Insert the other plug ⑦ of DC power cord ⑤ all the way into connector ⑨ of power supply box ⑧. Secure the plug ⑦ by turning the outer casing.

(4) Insert plug ⑪ of AC power cord ⑩ all the way into connector ⑫ of the power supply box ⑧.

(5) For wiring of editing machine AMC388 and disk reader AMC330, refer to the respective manuals.

(6) When the above wiring is complete, insert plug ⑬ of AC power cord ⑩ to a receptacle.

NOTE: Always connect AC power cord ⑩ of power supply box ⑧ to a receptacle with ground pin.

(7) The above completes wiring of the AD830.

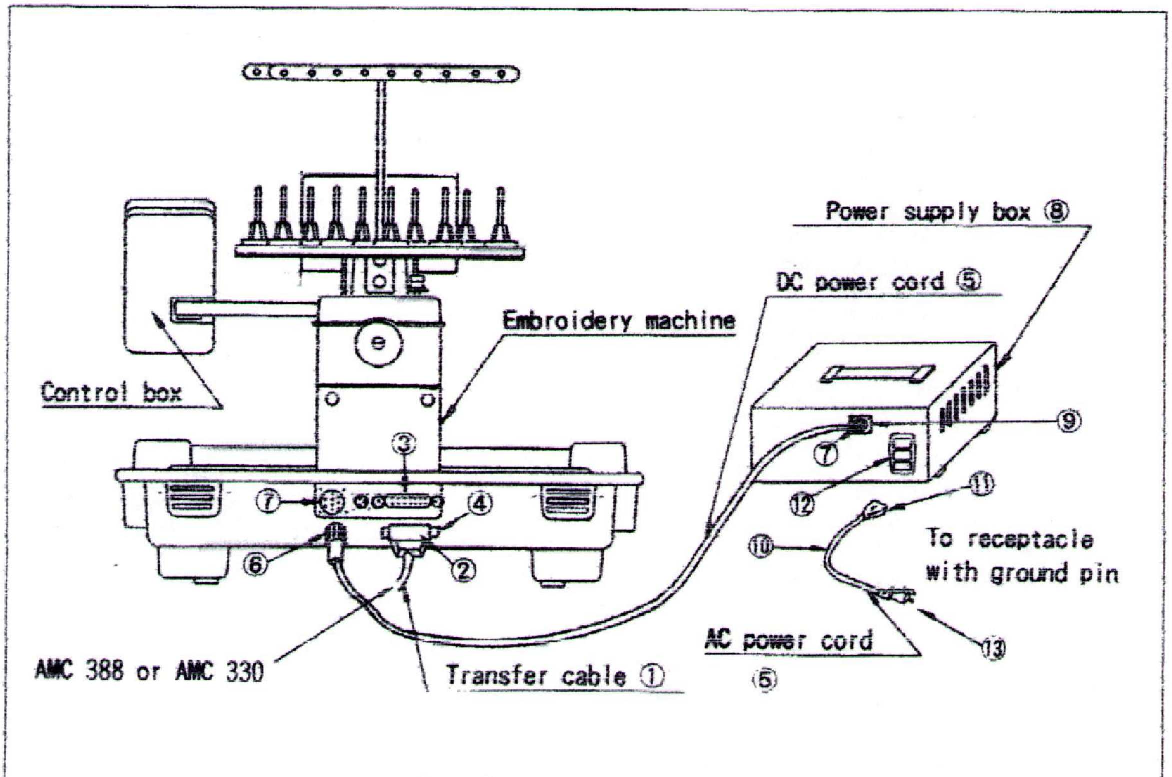

Power supply box ⑧
DC power cord ⑤
Embroidery machine
Control box
③
⑦
④
⑥
②
⑨
⑦
⑫
⑪
⑩
To receptacle
with ground pin
⑬
AC power cord
⑤
AMC 388 or AMC 330
Transfer cable ①

Fig. 6.1 Wiring of AD830

7. OPERATION PROCEDURE

1) Preparation

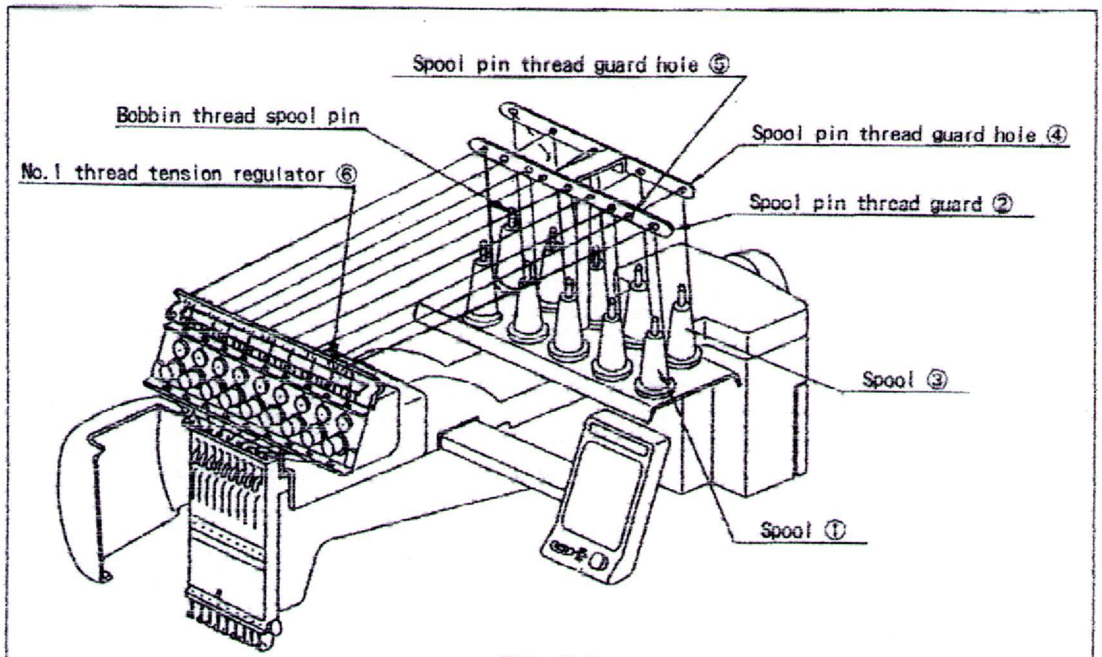

Spool pin thread guard hole ⑤
Bobbin thread spool pin
Spool pin thread guard hole ④
No.1 thread tension regulator ⑥
Spool pin thread guard ②
Spool ③
Spool ①

Fig. 7.1

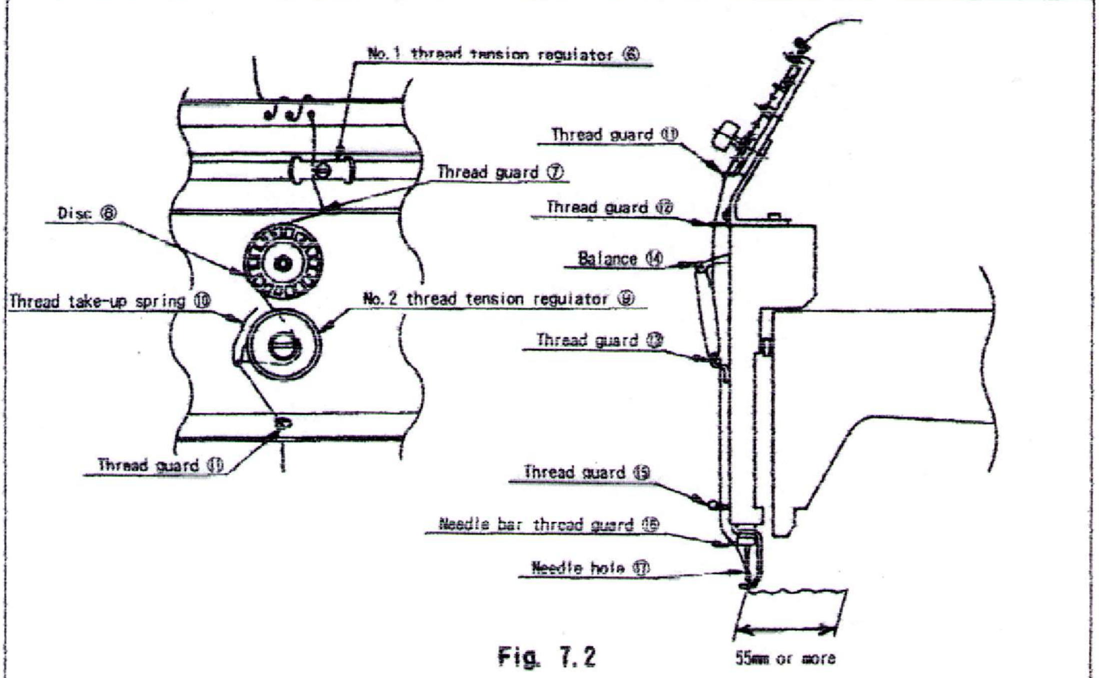

No.1 thread tension regulator ⑥
Thread guard ⑪
Thread guard ⑦
Thread guard ⑫
Disc ⑧
Balance ⑭
Thread take-up spring ⑩
No.2 thread tension regulator ⑨
Thread guard ⑬
Thread guard ⑪
Thread guard ⑮
Needle bar thread guard ⑯
Needle hole ⑰
55mm or more

Fig. 7.2

1. Setting the upper thread

(1) Pass the upper thread of spool ① through the hole in spool pin thread guard ② and just above the spool. For the upper thread of spool ③ on the rear row, pass it through the hole in spool pin thread guard ④ just above the spool and then the hole in thread guard ⑤ on the front row.

↓

(2) Pass the upper thread through three holes of No. 1 thread tension regulator ⑥.

↓

(3) Pass the upper thread through No. 1 thread tension regulator ⑥.

↓

(4) Route the upper thread through thread guard ⑦.

↓

(5) Route the upper thread through the outer circumference of disc ⑧ from the left side.

↓

(6) Route the upper thread through No. 2 thread tension regulator ⑨ from the right side.

↓

(7) Route the upper thread through thread take-up spring ⑩.

↓

(8) Route the upper thread through thread guards ⑪ and ⑫.

↓

(9) Route the upper thread through thread guard ⑬.

↓

(10) Route the upper thread through balance ⑭.

↓

(11) Route the upper thread through thread guard ⑬ again.

↓

(12) Route the upper thread through thread guard ⑮.

↓

(13) Route the upper thread through tension thread guard ⑯.

↓

(14) Pass the upper thread through needle ⑰ from the front to the rear.

NOTE: The thread length from the needle hole must be at least 55 mm. Otherwise, failure in taking-up the thread may occur.

Loosen two fastening screws (11) to raise the upper thread guide (10) and fix it to the position with the fastening screws (11). (Fig. 7.3)

2. Winding the bobbin thread

(1) Insert empty bobbin ① all the way onto thread winder ② aligning groove ③ in the empty bobbin and pin ④ of thread winder ②. Push up thread wind lever ⑤ from the dotted line to the actual line position shown in Fig. 7.3.

(2) Route the thread through the spool pin thread guard ⑥, the bobbin thread tension regulator ⑦ as shown in α view in Fig. 7.3 and wind it clockwise (in the direction of arrow) onto the bobbin about 10 times.

(3) Start winding the thread by pressing the Bobbin Winding key on the control panel.

(4) When the thread is wound appropriately on the bobbin (1.5 to 2.5 mm bobbin than the outer edge of bobbin), thread wind lever ⑤ automatically returns to the dotted line position to stop thread winding.

(5) Remove bobbin ① from thread winder ②. Thread winding is now complete.

NOTES:

- The quantity of thread wound can be adjusted by the thread wind lever position shown by the actual line.
- Thread winding is halted halfway when the Bobbin Winding key on the control panel is pressed a second time.
- Adjust bobbin thread tension regulator ⑦ so that the thread tension is 50 to 60 grams when the bobbin thread is pulled in the F direction in the α view of Fig. 7.3. Insert bobbin thread ⑧ all the way between two discs ⑨.
- During bobbin thread winding, do not place a spool on the adjacent spool pin (spool pin A) to avoid entangling the thread of the adjacent spool.

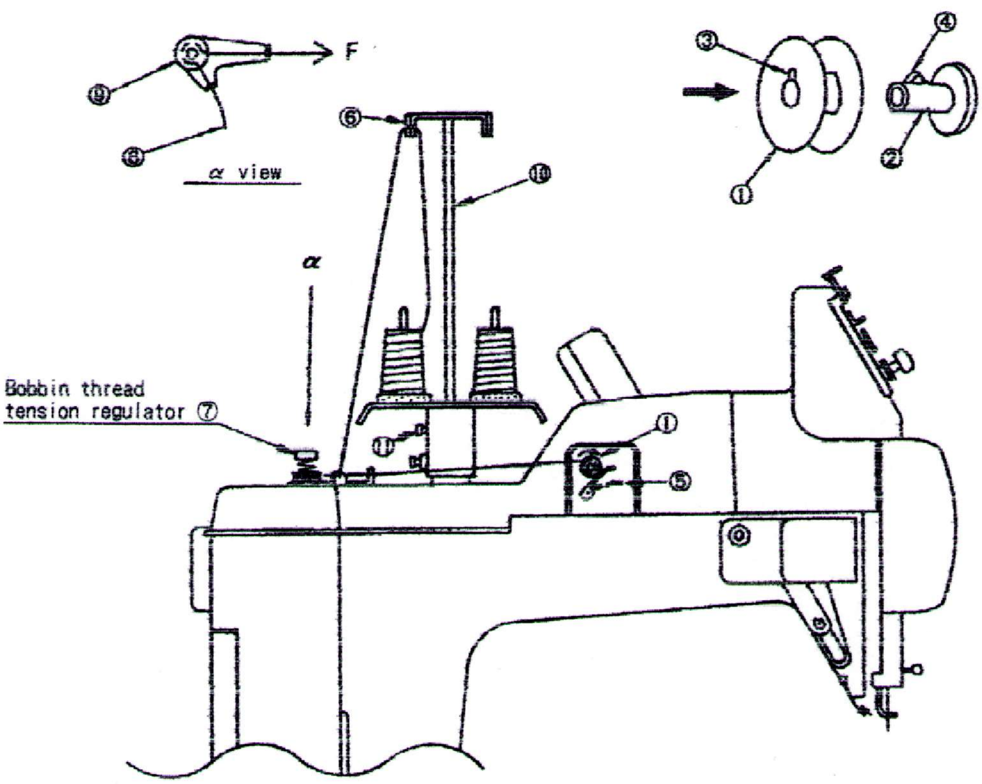

F
⑨
⑧
α view
⑥
⑩
③
④
①
②
α
Bobbin thread tension regulator ⑦
⑪
①
⑤

Fig. 7.3

3. Setting the bobbin thread (Fig. 7.4)

(1) Orient bobbin ① with its thread facing in the direction of the allow and put it into bobbin case ②.

(2) Route the thread through thread groove ③ in the bobbin case, under thread tension spring ④ and thread guard ⑤.

(3) Raise lever ⑥ on the bobbin case and then install the case on the shuttle.

NOTE: The standard bobbin thread tension is 25 to 30 g for the carbonized yarn No. 120. The thread tension can be adjusted with the bobbin case adjustment screw. Rotating the screw clockwise tightens the thread; counterclockwise loosens it. For adjustment, suspend three 25-cent coins from the bobbin case by taping them to the thread as shown in Fig. 7.4. If the thread is pulled out slightly when the bobbin case is gently shaken up and down, the thread tension is between 25 and 30 g.

4. Setting the fabric on the hoop

(1) Place the fabric ② on outer embroidery hoop ① and press inner embroidery hoop ③ into the outer hoop. If the hoops are too tight, loosen hoop set screw (4) shown in Fig. 7.5.

(2) Press the center of the fabric gently with a finger as shown in Fig. 7.6. If the fabric returns to its original position, the tension is satisfactory.

(3) If the same fabric is to be embroidered, the embroidery hoop set screw should not be readjusted for efficient work.

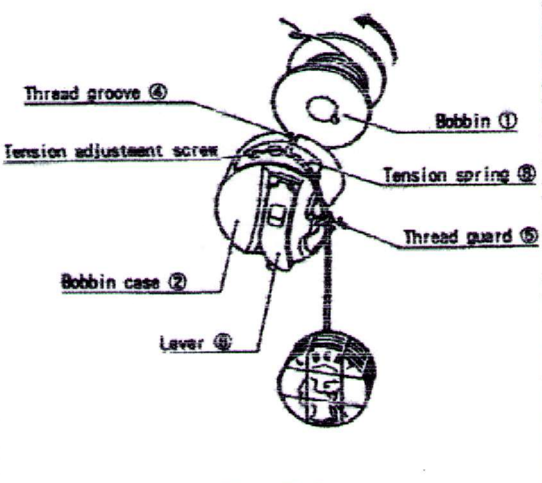

Thread groove ④
Tension adjustment screw
Bobbin ①
Tension spring ③
Thread guard ⑤
Bobbin case ②
Lever ⑥

Fig. 7.4

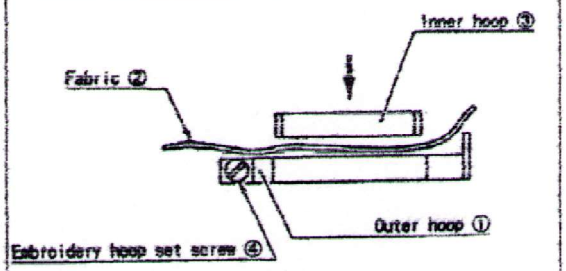

Inner hoop ③
Fabric ②
Outer hoop ①
Embroidery hoop set screw ④

Fig. 7.5

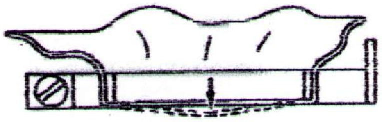


Fig. 7.6

5. Setting the hoop to embroidery machine

(1) Set screw type embroidery hoop

(a) Secure embroidery hoop holder ③ to threaded holes ② of holder ① using two screws ④ as shown in Fig. 7.7.

(b) To replace working fabric ⑥ set to embroider hoop ⑤, loosen two hoop set screws ⑦, remove the embroidery hoop ⑤ from the embroidery hoop holder ③ and replace the fabric ⑥. Set the embroidery hoop ⑤ to the embroidery hoop holder ③ from the front and tighten set screws ⑦ as shown in Fig. 7.8.

(2) Magnet type embroidery hoop

(a) Secure embroidery hoop holder ③ to threaded holes ② of holder ① using two screws ④ as shown in Fig. 7.9.

(b) Align steel plate ⑥ of embroidery hoop ⑤ to cutout ⑦ in magnet holder ③ and set the bottom of embroidery hoop ⑤ horizontally to table surface ⑧.

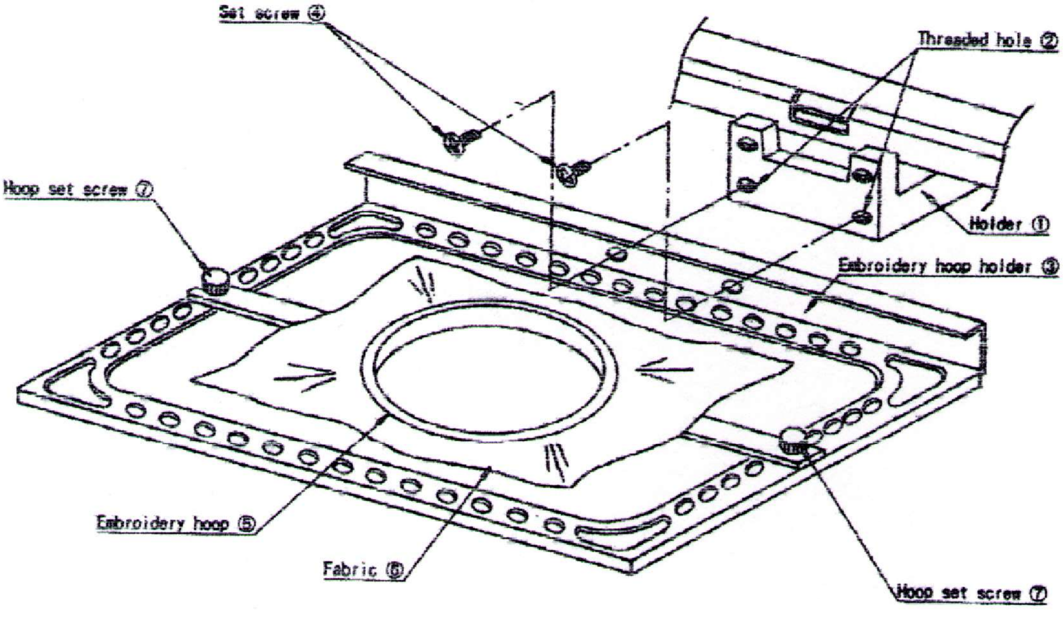

Set screw ④
Threaded hole ②
Hoop set screw ⑦
Holder ①
Embroidery hoop holder ③
Embroidery hoop ⑤
Fabric ⑥
Hoop set screw ⑦

Fig. 7.7

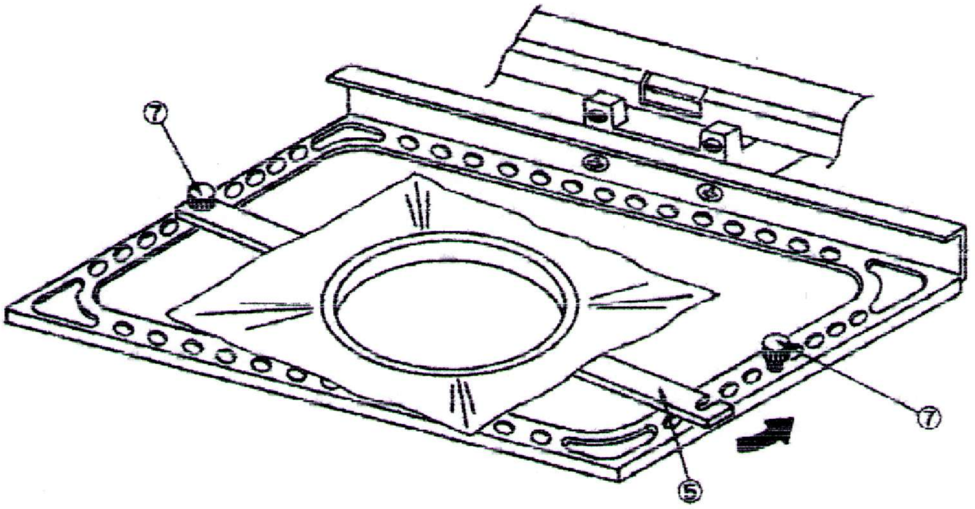


Fig. 7.8

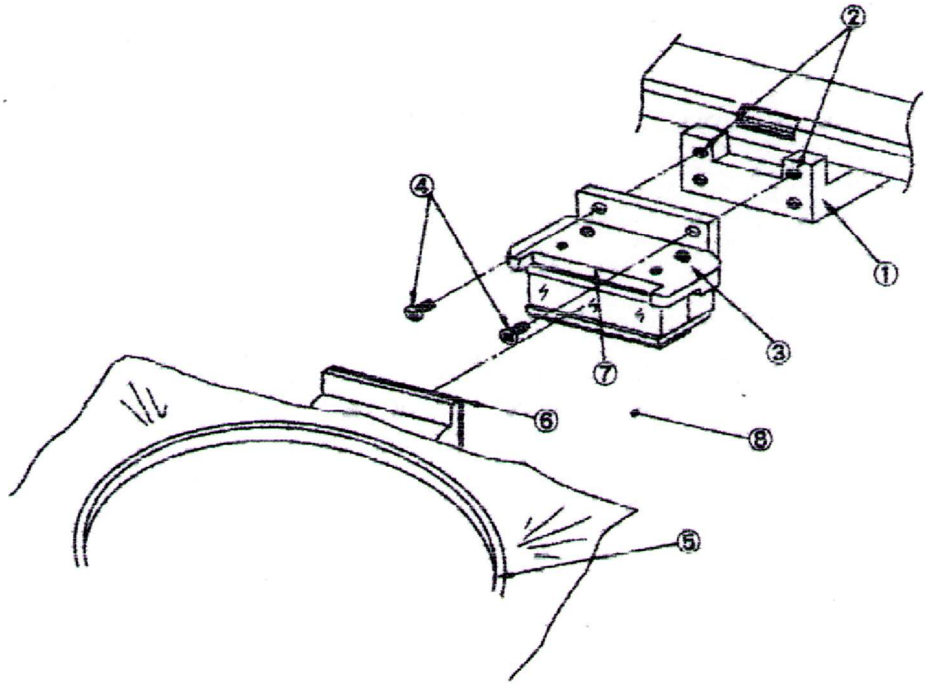


Fig. 7.9

6. Replacement of the needle (Fig. 7.10)

(1) To remove needle ①, rotate needle set screw ② counterclockwise.

(2) To mount the needle, point the needle groove ③ to the front, insert the needle bar all the way in and secure it firmly by rotating the set screw clockwise.

NOTE: Set the needle with its recess ④ facing the shuttle.

7. How to remove the bobbin case

(1) Hold bobbin case lever ① at the raised position and remove the bobbin case from the shuttle (Fig. 7.11).

8. How to re-set bobbin case

(1) Grip the bobbin case lever and insert the bobbin case all the way into the shuttle so that its protrusion ② engages with shuttle groove ③ (Fig. 7.11).

NOTE: Pull the bobbin thread 30 to 40 mm out of the bobbin case thread guard toward you.

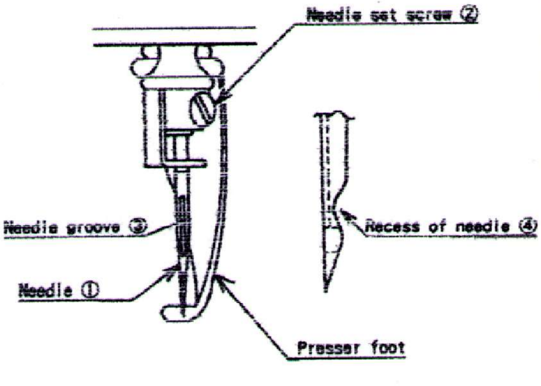

Needle set screw ②
Needle groove ③
Needle ①
Recess of needle ④
Presser foot

Fig. 7.10

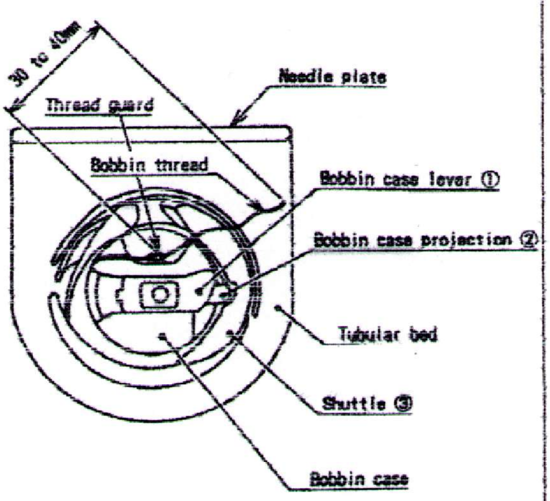

30 to 40mm
Thread guard
Needle plate
Bobbin thread
Bobbin case lever ①
Bobbin case projection ②
Tubular bed
Shuttle ③
Bobbin case

Fig. 7.11

9. Choosing the thread and needle for various fabrics

Needle		#9 to #11	#11	#11 to #14	#14
Fabric		Thin fabric		Normal fabric	Thick fabric
		Crepe de chine, georgette crepe, broad cloth, gingham, tricot fabric, etc.		Jersey, serge, normal-thickness felt, cotton fabric, etc.	Coat fabric, corduroy, denim, leather, etc.
Thread	Needle thread	Rayon thread		Rayon thread: 120d/2	Rayon thread: 120d/2
		75d/2	120d/2		
		Silk thread		Silk thread: #50	Silk thread: #50
		#80	#50		
	Bobbin thread	Carbonized thread		Carbonized thread: #80 to #120	Carbonized thread: #80 to #120
		#120	#80		

(1) The above combinations of needles, fabric and thread are standard.

(2) When thin material needs to be sewn, attaching a piece of non-woven backing (or paper) to the back of the fabric results in beautiful embroidery.

(3) When metallic thread (gold or silver) is used, attaching wax paper (such as HI-BON No.50 supplied by Shinwa Paper Co.) to the back of the fabric results in beautiful embroidery.

(4) For normal fabrics, use a DB×K5#11 or #14 needle according to the thickness of the fabric to be embroidered.

(5) For knitwear, use a DB-K23#11 needle. It has a rounded tip (ball-point) to prevent foundation thread breakage.

(6) The stitch interval varies slightly depending on the pattern enlargement and reduction ratios, thread density and needle thread thickness.

NOTES:

- The higher the number, the larger the needle and its hole.
- The higher the number, the thicker the rayon thread.
- The higher the number, the thinner the silk and carbonized thread.
- For metallic thread (gold or silver), locate the spool under position Ⓐ, Ⓑ or Ⓒ shown in Fig. 7.12 and pass it twice through the thread guard hole as shown in Fig. 7.13.
- When metallic thread (gold or silver) is used, do not insert a spool onto the spool pin next to the other spool. Otherwise, the thread may become entangled during embroidery.
- When any thread, other than laminate (metallic) thread, that frequently causes entanglement is used, pass it twice through the thread guard hole as shown in Fig. 7.13. The spool may be located in other than Ⓐ, Ⓑ or Ⓒ.

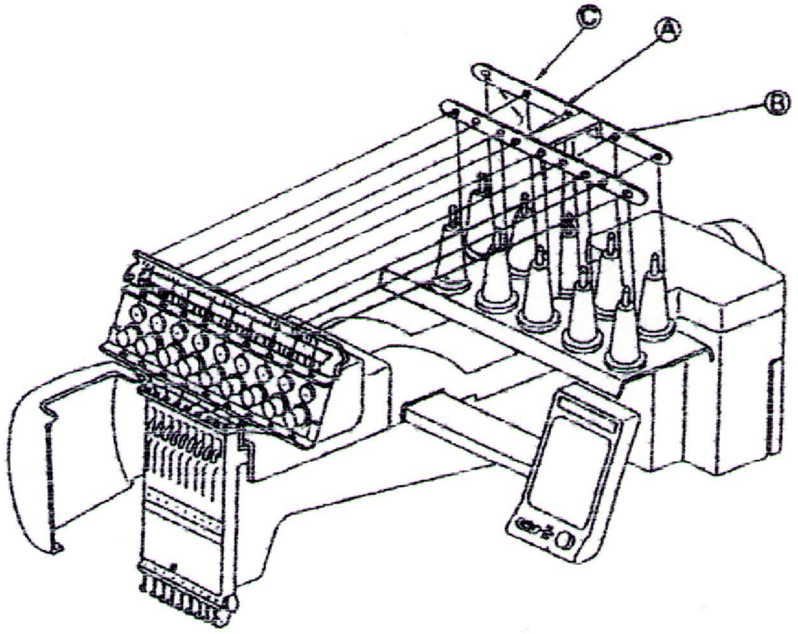


Fig. 7.12

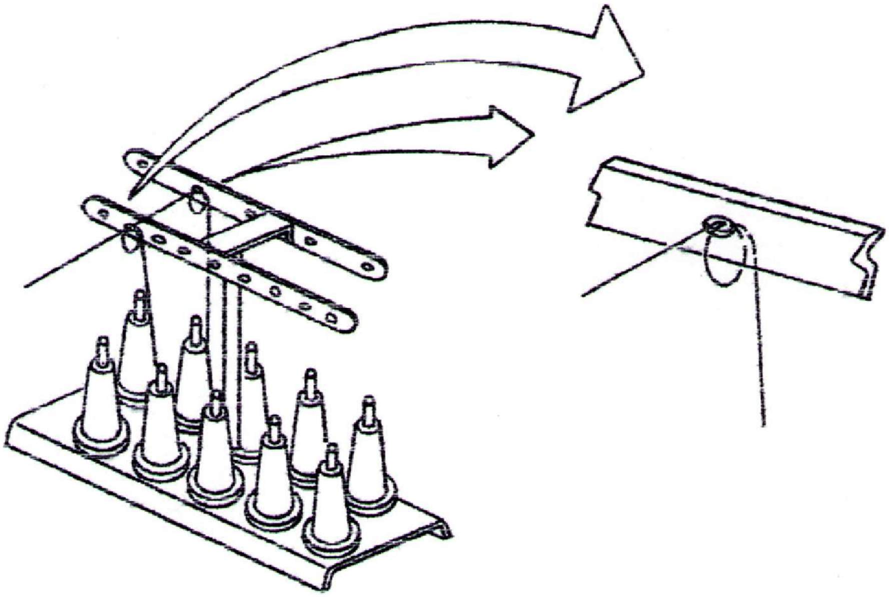
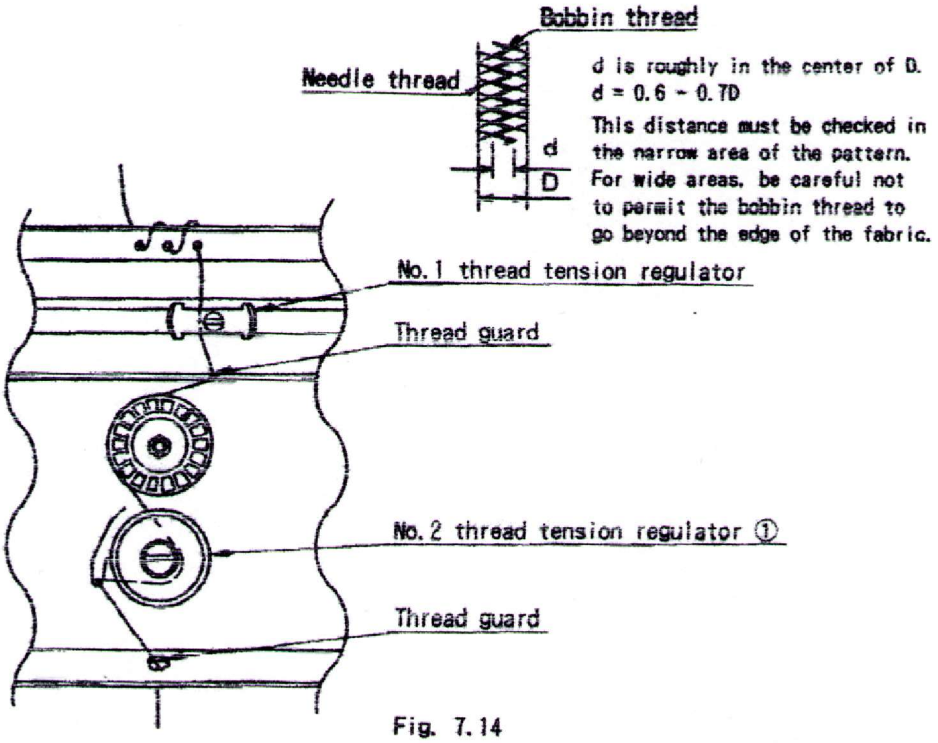


Fig. 7.13

10. Adjusting the needle thread tension

Adjust the thread tension using No. 2 thread tension regulator ① so that the bobbin thread does not go beyond the edge of the fabric with the bobbin thread tension adjusted to the standard (25 to 30 g).

Fig. 7.14 shows the needle and bobbin thread conditions on the back of the fabric that provide the best stitch tightness.


Bobbin thread
Needle thread
d
D
No. 1 thread tension regulator
Thread guard
No. 2 thread tension regulator ①
Thread guard

d is roughly in the center of D.
d = 0.6 - 0.7D
This distance must be checked in the narrow area of the pattern. For wide areas, be careful not to permit the bobbin thread to go beyond the edge of the fabric.

Fig. 7.14

11. Adjusting the margin needle thread length

(1) Adjust the margin needle thread length by adjusting picker selector switch ① between 1 and 5 positions (standard is 3).

The smaller the number, the shorter the margin needle thread length (setting to 6, 7, 8, 9 or 0 is the same as 5).

(2) If the margin needle thread length is too short, it will come off the needle at the beginning of the next sewing.

(3) If it is too long, the end of the thread will remain on the cloth at the beginning of the next sewing.

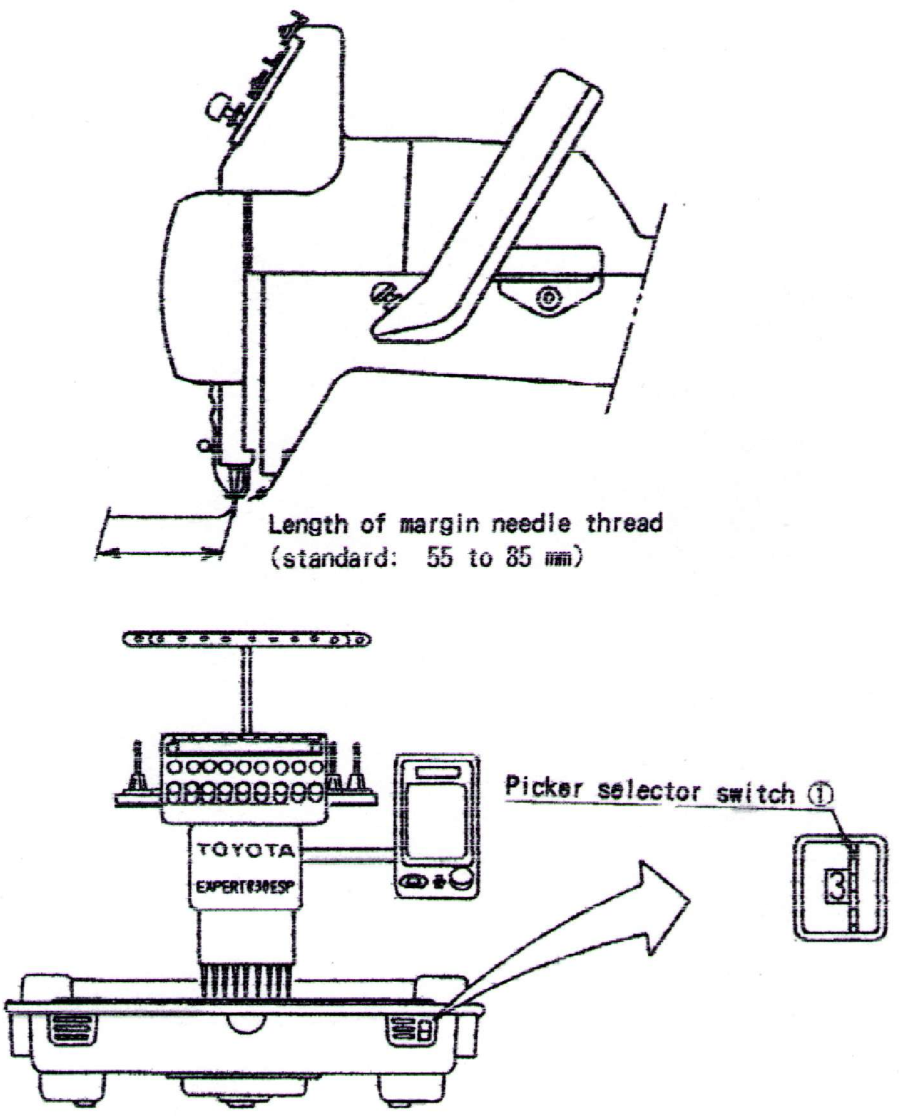

Length of margin needle thread
(standard: 55 to 85 mm)
Picker selector switch ①
TOYOTA
EXPERT830ESP
3

Fig. 7.15

2) Embroidering Operation

For operation procedures of the AMC388 or AMC330, refer to the respective instruction manual. This section explains operation procedures for the AD830 (embroidery machine) upon completion of AMC388 or AMC330 operation.

(1) Attaching the embroider hoop with fabric set to magnet holder

See "5. Setting the hoop to embroidery machine" on page 21 and 22.

(2) Operate the Position keys to move the embroidery hoop so that the needle tip is at the starting point ① shown in Fig. 7.16.

(3) Hook edge ② of the needle thread on thread retaining spring ③ and cut the thread leaving about 20 to 30 mm margin from the thread retaining spring as shown in Fig. 7.17.

(4) Press the Start key and then the Stop key after about 10 stitches. Cut the edge of needle thread by scissors and then press the Start key again to restart sewing.

NOTE: Speed is indicated during embroidery on the lower right message area of the LCD screen.

(5) Upon completion of embroidery, the thread is cut automatically and the machine stops.

NOTE: If the set screw type embroider hoop holder is used and the embroidery machine is activated without attaching the embroidery hoop, the set screw of the embroidery holder may come into contact with and damage the table.

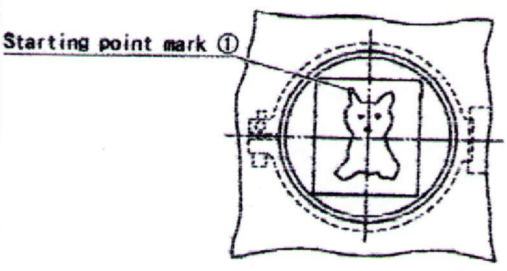


Fig. 7.16

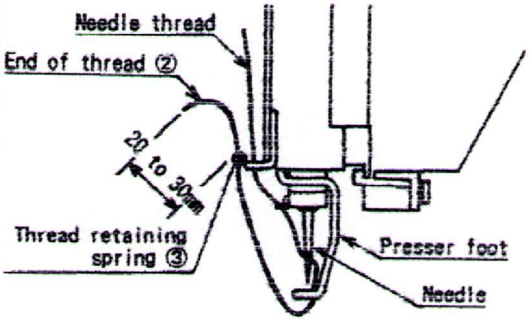


Fig. 7.17

3) OPERATION PROCEDURES OF CONTROL BOX

The following operations are conducted using the control box.

- Registration and deletion of embroidery data
  (1) Read the data from Disk Reader AMC330
  (2) Read the data from editing system
  (3) Store the data onto embroidery machine memory
  (4) Delete the data from embroidery machine memory
  (5) Delete all data from embroidery machine memory

- Settings of needle bar changing mode and needle bar numbers for needle bar changing operation

- Editing the data
  (1) To set the data for rotated embroidering
  (2) To set the data for inverted embroidering
  (3) To set the data for repeated embroidering
  (4) To use above functions in combination

- Setting of embroidery hoop
  (1) Centering function
  To set for automatic adjustment of the embroidery starting point to be the center of the embroidery hoop
  (2) Interference check function
  To check to see if the hoop size is appropriate for embroidery data before start embroidering

- Other settings
  (1) To set the number of forward/back stitches for moving the hoop
  (2) To set the position of the hoop to be moved during embroidering

Operations of the above important functions are explained on the following pages.

Operating Precautions

1. Check that the emergency stop button is reset before turning power on. If the power is turned on with the emergency stop button activated, reset the emergency stop button and turn the power on again.

2. When the emergency stop button is pressed during the offset operation (during offsetting or while the frame is moving after offset), be careful since the machine cannot return to the embroidery stop point, but it returns to the point where the emergency stop button was pressed.

3. When the frame is moved to limits in the X and Y directions using the frame shift keys, the indicated points deviate by ±0.1 mm, which is caused by positional deviation. Difference between the indicated value and actual point is not more than 0.1 mm.

Messages on LCD P.33

Dip Switch Setting P.37

Set-up when Turning on the Power P.38

Read the data from Disk Reader AMC330 .... P.39

Read the data from Editing System P.42

Read the data from Embroider Machine Memory P.45

Needle bar Change P.48

Rotation Angle P.51

Mirror P.53

Repeat P.55

Combined Use of Edit Function P.58

Forward/Back P.59

Centering P.61

Hoop Interference Check P.63

Hoop Size P.65

Cap Frame Embroidery P.69

Move Hoop P.70

Delet the data from Embroidery Machine Memory P.72

Standard Operation Procedure in Embroidering P.74

Contents of Error Messages P.85

AD830 Operation Flow Chart P.86

Messages on LCD

Mode	No.	Message	Description
External data input mode	1	*** INPUT THRU PC ** NUMBER → ① NAME → ② MEMORY → ③ ①…File number ②…File name ③…Remaining capacity of embroidery machine memory	The data can be read from Editing System. Effective keys: 1~9, SET, ESC, CLR
	2	**** INSERT DISK *** SET KEY → READ FILE ECS KEY → PRE MENU	The data can be read from Disk Reader AMC330A. Effective keys: SET, ESC
	3	*** FILE READING *** READING FILE DATA	This is indicated during reading of embroidery file data.
	4	**** SELECT FILE *** ① → ② STITCH → ③ MEMORY → ④ ①…File number ②…File name ③…Total stitches of the data ④…Remaining capacity of embroidery machine memory	The data can be read from Disk Reader AMC330A. Effective keys: ⇦, ⇨, SET, F, CLR, ESC
Save data select mode	5	*** SELECT DESIGN ** ①/② → ③ LABEL → ④ STITCH → ⑤ ①…File saving priority ②…Number of saved files ③…File name ④…Label name (only for Tajima data) ⑤…Number of stitches of the file	The data stored in embroidery machine memory can be selected. Effective keys: ⇦, ⇨, ⇧, ⇩, SET, ESC, CLR
	6	*** INFORMATION 1 ** X SIZE → ① +X AREA → ② −X AREA → ③ ①…Size in the X-axis direction ②…Right end point of data ③…Left end point of data	This indicates the size in the X-axis direction of the data selected in step 5. Effective keys: ⇦, ⇨, ⇧, ⇩, ESC
	7	*** INFORMATION 2 ** Y SIZE → ① +Y AREA → ② −Y AREA → ③ ①…Size in the Y-axis direction ②…Right end point of data ③…Left end point of data	This indicates the size in the Y-axis direction of the data selected in step 5. Effective keys: ⇦, ⇨, ⇧, ⇩, ESC
	8	*** INFORMATION 3 ** COLOR → ① END X → ② END Y → ③ ①…Number of colors ②…X coordinates of end point ③…Y coordinates of end point	This indicates the number of colors contained in data selected in step 5 and the end point. Effective keys: ⇦, ⇨, ⇧, ⇩, ESC

Mode	No.	Message	Description
Menu select mode	9	**** DESIGN MENU *** (1) SELECT DESIGN (2) INPUT DESIGN	This is used to select the origin of the data. Effective keys: [1], [2], [⇧], [⇩], [SET], [ESC]
	10	****** F1 MENU ***** (1) COLOR CHANGE (2) FORWARD/BACK	This is used to select the thread change or forward/back menu. Effective keys: [1], [2], [⇧], [⇩], [SET], [ESC]
	11	****** F2 MENU ***** (1) HOOP (2) ROTATE/MIRROR (3) REPEAT	This is used to select the hoop, rotation/mirror or interference check menu. Effective keys: [1], [2], [3], [⇧], [⇩], [SET], [ESC]
Setting mode	12	*** COLOR CHANGE *** MODE → ① STOP → ② ③/④ → ⑤ ①···Mode (auto/manual) ②···Stop (on/off) ③···Current order of needle bar sequence ④···Number of colors ⑤···Current needle number	This is used for setting color change. Effective keys: [A/M], [◁], [▷], [1]~[9], [□], [SET], [ESC], [CLR]
	13	*** FORWARD/BACK *** UNIT → ① ①···Unit of forward/back (1 stitch or color change)	This is used to select the unit of forward/back. Effective keys: [⇦], [⇨], [SET], [ESC], [CLR]
	14	***** MOVE HOOP **** MODE → ① 0x → ② (③) 0y → ② (③) ①···Move hoop mode (auto/manual) ②···Current hoop point ③···Point to move hoop	This is indicated when move hoop. Setting the position of the hoop to be moved. Effective keys: [⇦], [⇨], [⇧], [⇩], [MOVE HOOP], [SET], [□], [CLR]
	15	******* HOOP ******* HOOP NO → ① CENTER → ② CHECK → ③ ①···Hoop number and size ②···Centering (on/off) ③···Interference check (on/off)	This is used to set the hoop number, centering or interference check function. Effective keys: [⇦], [⇨], [⇧], [⇩], [SET], [ESC], [CLR]
	16	*** ROTATE/MIRROR ** ROTATE → ① MIRROR → ② ①···Rotation angle (0°, 90°, 180°. 270°) ②···Inverting axis (off, X, Y)	This is used to set the rotate or mirror function. Effective keys: [⇦], [⇨], [⇧], [⇩], [SET], [ESC], [CLR]

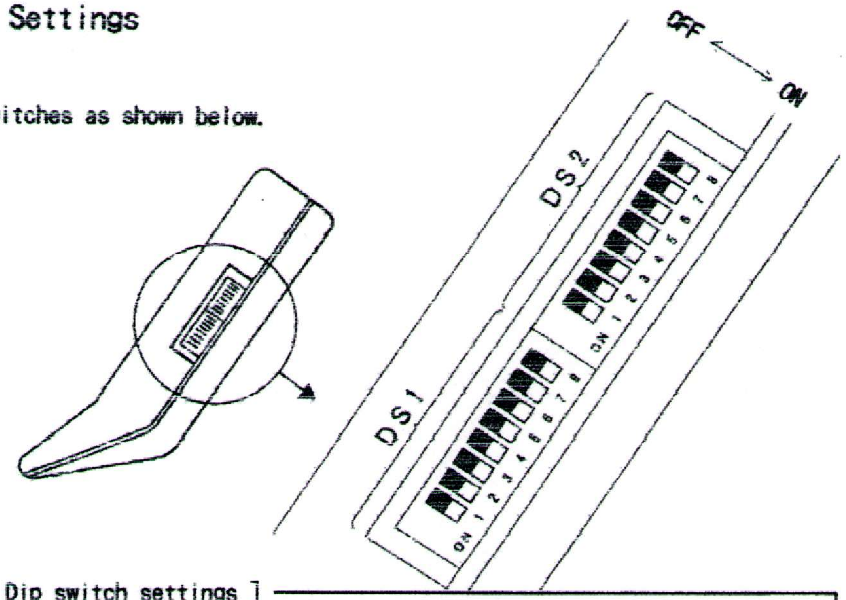
Mode	No.	Message	Description
Setting mode	17	****** REPEAT ****** DIR → ① TIMES → ② SPACE → ③ ①···Direction of repeat (horizontal or vertical) ②···Repeating times ③···Intervals between patterns	This is used to set the repeat function. Effective keys: ⇦, ⇨, ⇧, ⇩, SET, ESC, CLR
Embroidery mode	18	***** EMB START **** FILE → ① LABEL → ② ③/④ → ⑤ ①···File name ②···Label name (Digital data only) ③···Current order of needle bar sequence ④···Total color of the data ⑤···Current needle bar number	This is used to start embroidering. Effective keys: △, START, ⇦, ⇨, ⇧, ⇩, MOVE, TRACE, A/M, F1, F2, SET, FORWARD, BACK, TRIMMING
	19	****** EMB END ***** FILE → ① STITCH → ② ③/④ → ⑤ ①···File name ②···Total stitches of the data ③···Current order of needle bar sequence ④···Total color of the data ⑤···Current needle bar number	This is indicated at the end of embroidery. Effective keys: START, ⇦, ⇨, ⇧, ⇩, TRIMMING
	20	***** EMB PAUSE **** FILE → ① STITCH → ② ③/④ → ⑤ ①···File name ②···Total stitches of the data ③···Current order of needle bar sequence ④···Total color of the data ⑤···Current needle bar number	This is indicated while embroidering is halted. Effective keys: △, F1, F2, ⇦, ⇨, ⇧, ⇩, MOVE, A/M, FORWARD, BACK, TRIMMING
	21	**** SELECT MODE *** SET KEY → EMB PAUSE ESC KEY → EMB START	This menu appears in case the machine is turned off during embroidering or after completion. Effective keys: SET, ESC
Embroidery operation mode	22	*** EMBROIDERING *** FILE → ① STITCH → ② SPEED → ③ ①···File name ②···Total stitches of the data ③···r.p.m	This is indicated during embroidering. Effective keys: □
	23	******* TRACE ****** FILE → ① X SIZE → ② Y SIZE → ③ ①···File name ②···Size in the X-axis direction ③···Size in the Y axis direction	This is indicated during tracing. Effective keys: TRACE, START

Mode	No.	Message	Description
Embroidery operation mode	24	****** FORWARD ***** FILE → ① STITCH → ② UNIT → ③ ①··File name ②··Number of stitches ③··Number of forward stitches (1, color change)	This is indicated during automatic forwarding of the embroidery hoop. Effective keys: (⊡)
	25	******* BACK ******* FILE → ① STITCH → ② UNIT → ③ ①··File name ②··Number of stitches ③··Number of back stitches	This is indicated during automatic returning of the embroidery hoop. Effective keys: (⊡)
	26	**** XY POSITION *** X AXIS Y AXIS ①···X-axis coordinates ②···Y-axis coordinates	This indicates current coordinates of the hoop.
Test mode	27	***** TEST MODE **** (1) OPER CPU (2) MAIN CPU (3) XY CPU ①···Indication of operation ROM version number. ②···Indication of main ROM version number. ③···Indication of XY ROM version number.	This is used to test the CPU. Effective keys: (1), (2), (3), (⇧), (⇩), (SET)
	28	*** OPER CPU TEST ** (1) MEMORY TEST (2) BUZZER, LED TEST (3) KEY TEST	This is used to test the CPU of the operation box. Effective keys: (1), (2), (3), (⇧), (⇩), (SET)

NOTE: The (WIND) and (SENSOR) keys are effective for steps 1 through 26 only.

Dip Switch Settings

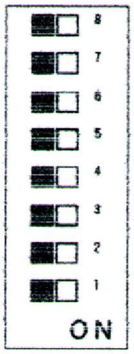
Set the dip switches as shown below.



[☆ Dip switch settings]

* (shipment position and for normal operation)

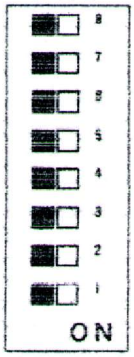
DS2



OFF ←——→ ON

DS2 No.	OFF		ON	
8	* AMC380/AMC388		AMC330	
7	* Flat hoop		Cap hoop	
6	* (OFF)	(ON)	(OFF)	(ON)
5	* (OFF)	(OFF)	(ON)	(ON)
	Embroidery machine No.1	Embroidery machine No.3	Embroidery machine No.2	Embroidery machine No.0
4	* (OFF)	(ON)	(OFF)	(ON)
3	* (OFF)	(OFF)	(ON)	(ON)
	Number of jump codes : *3	Number of jump codes : 8	Number of jump codes : 5	Number of jump codes :No thread cutting
2	Auto boring offset (when DS2-1 is on)		———	
1	———		boring	

DS1



DS1 No.	OFF	ON
8	* Normally set to off	———
7	* Normally set to off	———
6	* Normally set to off	———
5	* Normally set to off	———
4	* Normally set to off	———
3	* AD830 (9 stitches)	AD820A (6 stitches)
2	Japanese mode	* English mode
1	* Normal mode	Test mode

(Note 1) Use this machine with DIP switches DS1-3 set to OFF. If set to ON, needle bar changeover may fail.

Set-up when Turning on the Power

The menu appearing on the LCD upon turning power on depends on the machine status when power was previously turned off.

No.	Status when power was turned off	LCD Display	
1	During embroidery or completion of embroidery	**** SELECT MODE *** SET KEY → EMB PAUSE ESC KEY → EMB START * When (SET) is pressed, menu will change to ** EMB PAUSE **. When (ESC) is pressed, menu will change to ** EMB START **. (NOTE 1)	
2	When no data are stored in embroidery memory	DS2-8 ON	**** INPUT DISK **** SET KEY → READ FILE ESC KEY → PRE MENU
		DS2-8 OFF	***** EMB START **** NUMBER NAME MEMORY
3	When the data are stored in embroidery memory and power was turned off in status other than No.1	***** EMB START **** FILE LABEL	

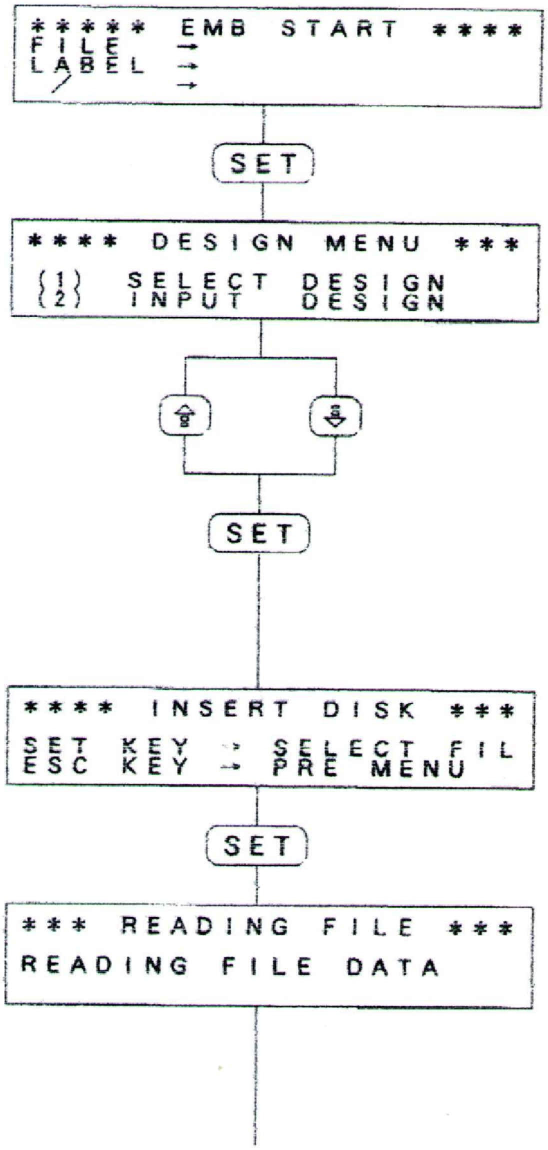
NOTE 1: Be careful since the hoop can moves immediately after pressing the (SET) or (ESC) key.

Read the data from Disk Reader AMC330

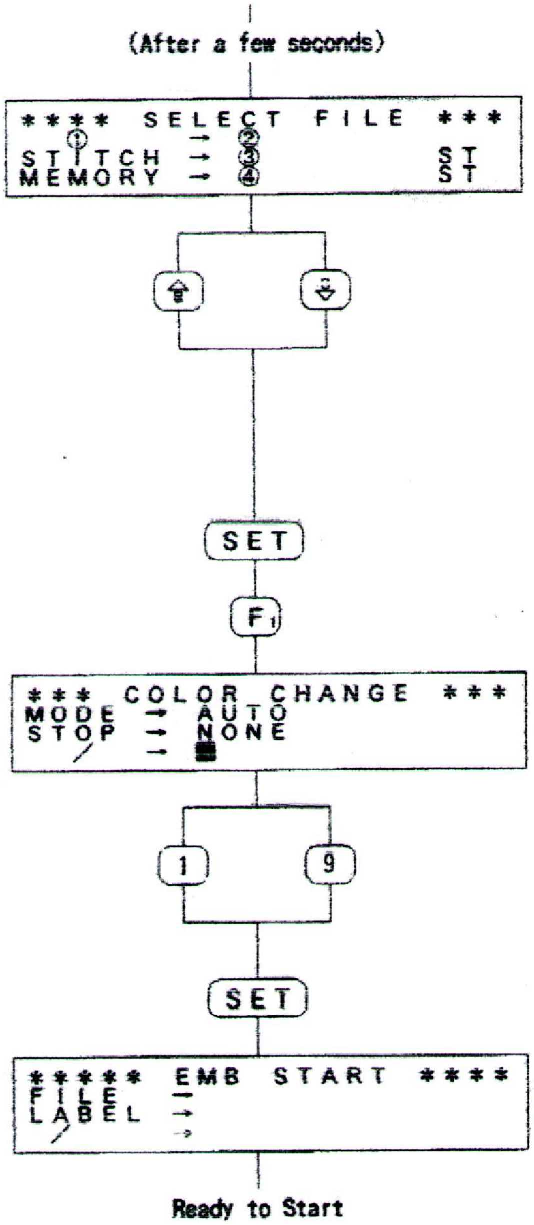
The data can be read from the disk reader when "INSERT DISK" menu is appearing on the LCD. The operation procedure is explained with an assumption that "EMB START" menu appears upon turning power on. (NOTE: Check that switch 8 of DS2 set to on. If not, turn power off and set the switch to on, and turn power on again, to start the operation from step (1).)

1. Set switch 8 of DS2 on the side of the control box to on.
2. Turn power on.
3. Press SET key.
4. Operate ⇧ and ⇩ keys to locate the cursor at (2) and press SET key (or press the 2 key).
5. Insert the data floppy disk to the disk reader.
6. Press SET key.

(The green LED flash)



***** EMB START ****
FILE →
LABEL →
→
SET
**** DESIGN MENU ***
(1) SELECT DESIGN
(2) INPUT DESIGN
⇧
⇩
SET
**** INSERT DISK ***
SET KEY → SELECT FIL
ESC KEY → PRE MENU
SET
*** READING FILE ***
READING FILE DATA


(After a few seconds)
**** SELECT FILE ***
①
→ ②
STITCH → ③ ST
MEMORY → ④ ST
⇧
⇩
SET
F1
*** COLOR CHANGE ***
MODE → AUTO
STOP → NONE
/ → ■
1
9
SET
***** EMB START ****
FILE →
LABEL →
/ →
Ready to Start

(Please refer to information P.12)

7. Select a file by pressing (⇧) and (⇩) keys.

(Holding the (⇧) or (⇩) key pressed scrolls the file number up or down.)

(NOTE 1)

8. Press (SET) key. (the green LED flash)

9. Press (F1) key.

10. Enter the needle bar numbers in the sequence of color change using the numeral keys.

(NOTE 2)

11. Press (SET) key.

NOTES:

①: Indicates the file number.

②: Indicates the file name.

③: Indicates the total stitches of the data.

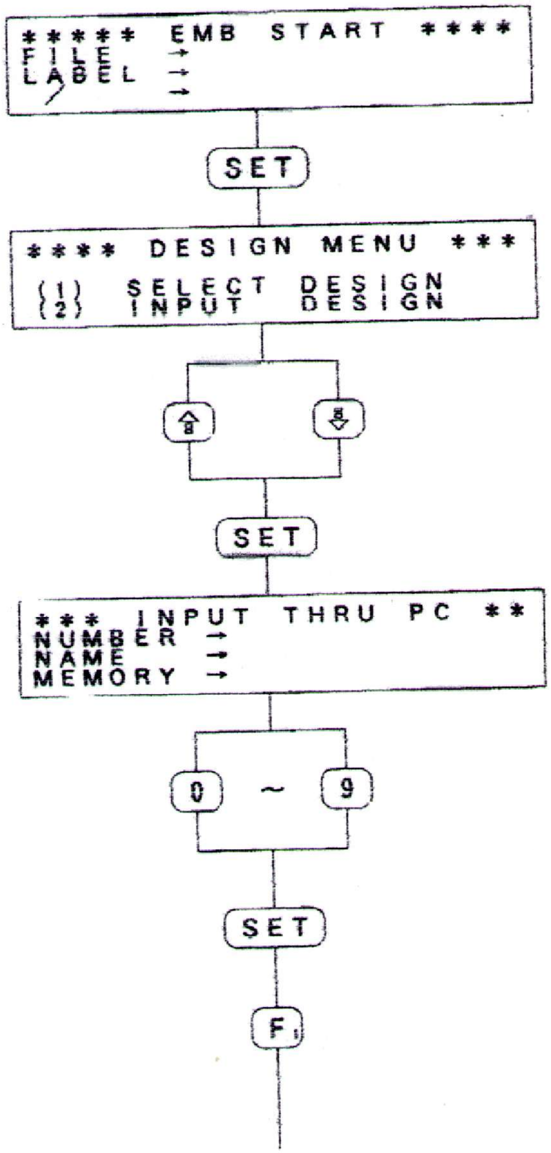
④: Indicates the remaining memory capacity of the embroidery machine.

NOTE 1: When the remaining memory capacity (information 4) is smaller than the total stitches of the data (information 3), data is not stored in the embroidery machine memory. Although data can be read for embroidering.

NOTE 2: Needle bars are to be changed automatically during embroidering.
For details, see page 48.

Read the data from Editing System

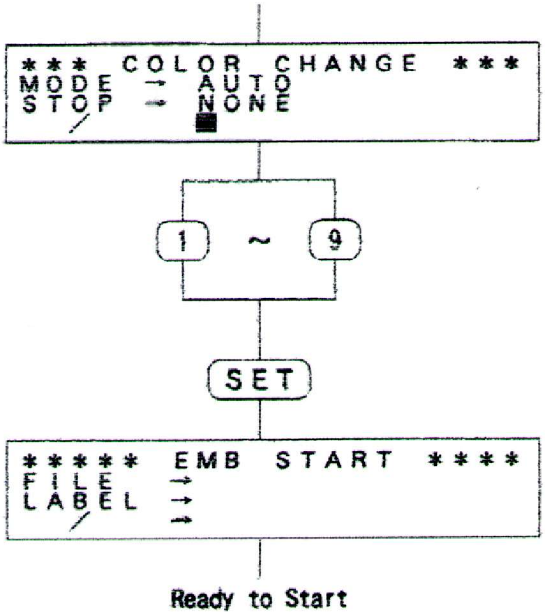
The data can be read from the editing system when the "INPUT THRU PC" menu is appearing on the LCD. The operation procedure is explained with an assumption that the "EMB START" menu appears upon turning power on. (NOTE: Check that switch 8 of DS2 set to off. If not, turn power off, set the switch to off and then turn power on again.)



***** EMB START ****
FILE →
LABEL →
→
SET
**** DESIGN MENU ***
(1) SELECT DESIGN
(2) INPUT DESIGN
⇧
⇩
SET
*** INPUT THRU PC **
NUMBER →
NAME →
MEMORY →
0
~
9
SET
F1

1. Set switch 8 of DS2 on the side of the control box to on.
2. Turn power on.
3. Press (SET) key.
4. Operate (⇧) and (⇩) keys to locate the cursor at (2) and press (SET) key (or press the (2) key).
5. Set the editing system ready for data transfer.
6. Enter a file number to be read using the numeral keys.
7. Press (SET) key and then (F1) key.

   (the green LED is flashing.)


*** COLOR CHANGE ***
MODE → AUTO
STOP → NONE
1 ~ 9
SET
***** EMB START ****
FILE →
LABEL →
→
Ready to Start

8. Enter needle bar numbers in the sequence of color change by the numeral keys. (NOTE 1)

9. Press SET key.

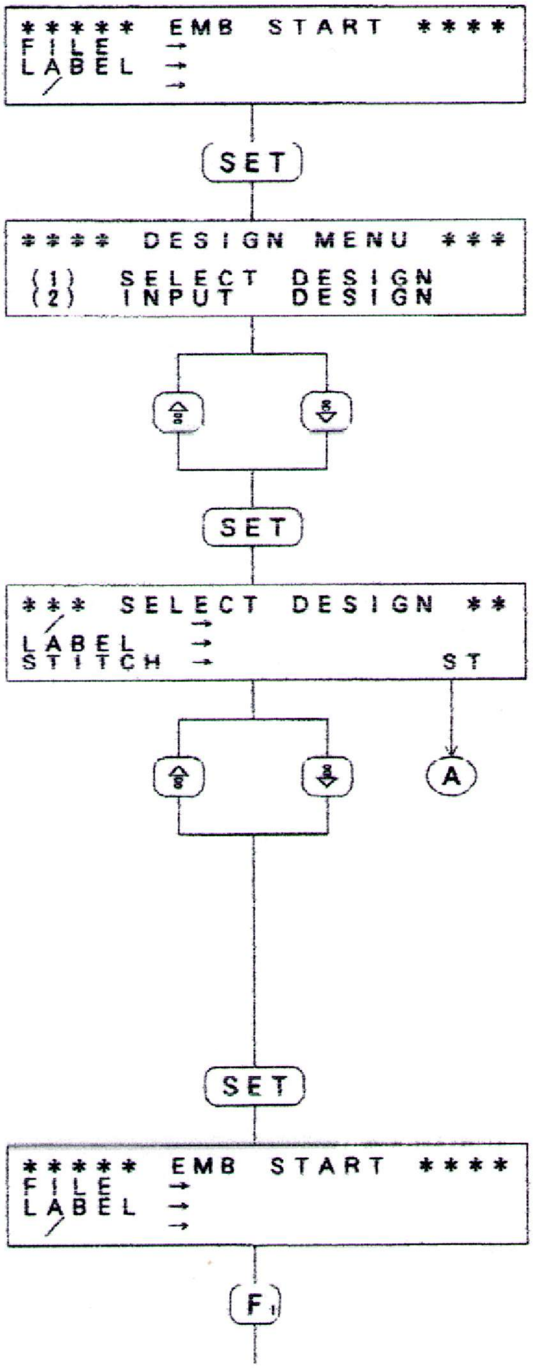
NOTES:

NOTE 1: Needle bars are to be changed automatically during embroidering. For details, see page 48.

〔 MEMO 〕

Read the data from Embroidery Machine Memory

When the "INSERT DISK" or "INPUT THRU PC" menu appears upon turning power on, no data are stored in the embroidery machine memory. So, resume the data read operation.

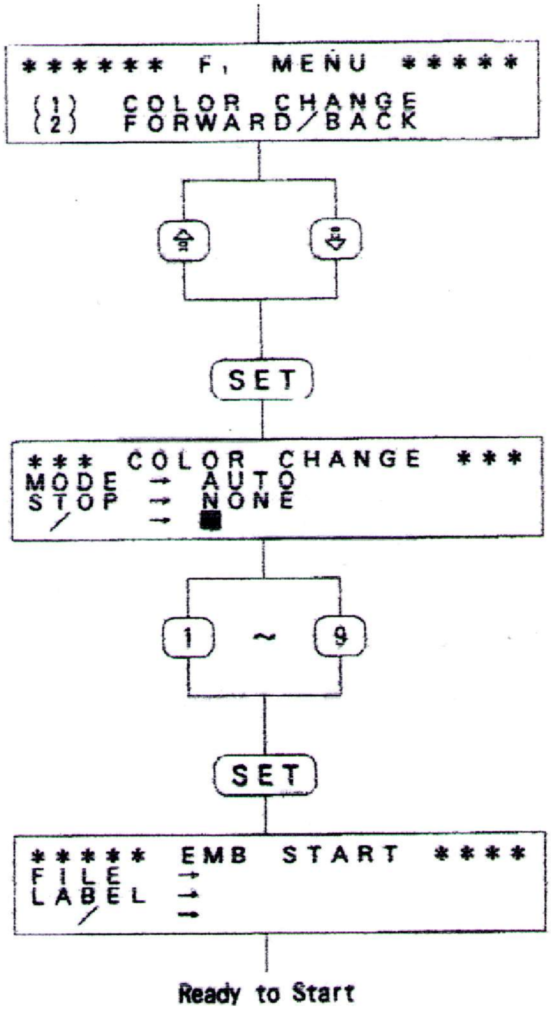


***** EMB START ****
FILE →
LABEL →
→
SET
**** DESIGN MENU ***
(1) SELECT DESIGN
(2) INPUT DESIGN
⇧
⇩
SET
*** SELECT DESIGN **
→
LABEL →
STITCH → ST
⇧
⇩
A
SET
***** EMB START ****
FILE →
LABEL →
→
F1

1. Turn power on.
2. Press (SET) key.
3. Operate (⇧) and (⇩) keys to locate the cursor at (1) and press (SET) key.
4. Press the (⇧) or (⇩) key to select a file name containing the desired data.

   (To check the file information, follow procedures from (A) (page 47).)

   (Hold the (⇧) or (⇩) key pressed scrolls the file number.)
5. Press (SET) key.
6. Press (F_1) key.


****** F₁ MENU *****
(1) COLOR CHANGE
(2) FORWARD/BACK
SET
*** COLOR CHANGE ***
MODE → AUTO
STOP → NONE
/ → █
1 ~ 9
SET
***** EMB START ****
FILE →
LABEL →
/ →
Ready to Start

7. Operate ⇧ and ⇩ keys to locate the cursor at (1) and press SET key (or press the 1 key).

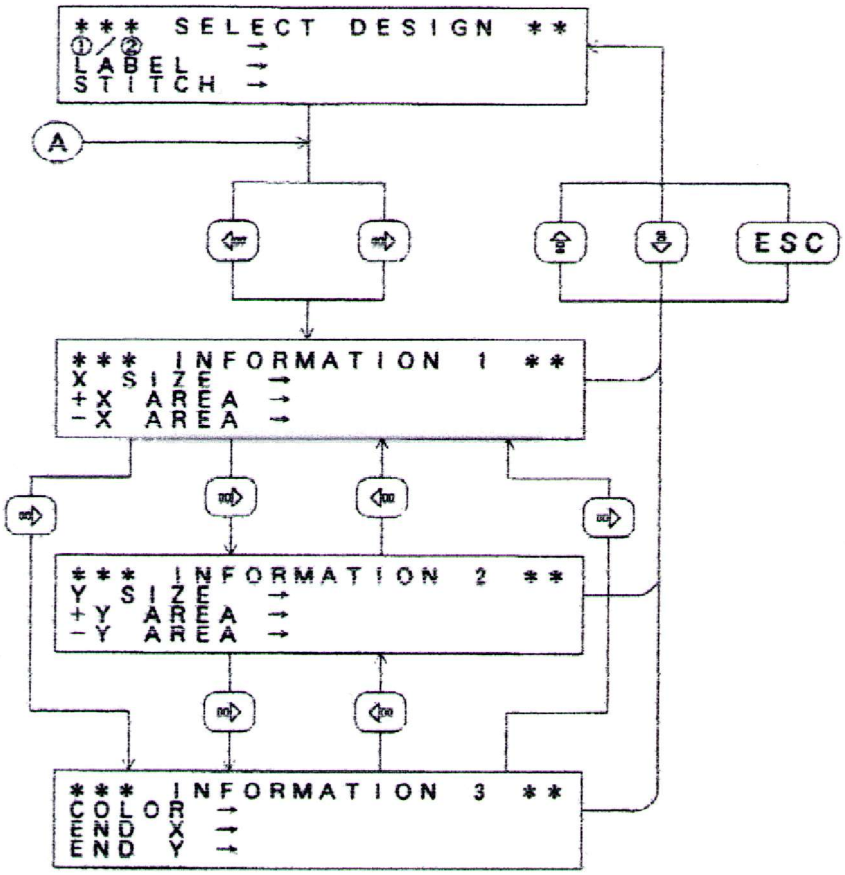
8. Enter needle bar numbers in the sequence of color change by the numeral keys. (NOTE 1)

9. Press SET key.

NOTES:

NOTE 1: Needle bars are to be changed automatically during embroidering. For details, see page 48.

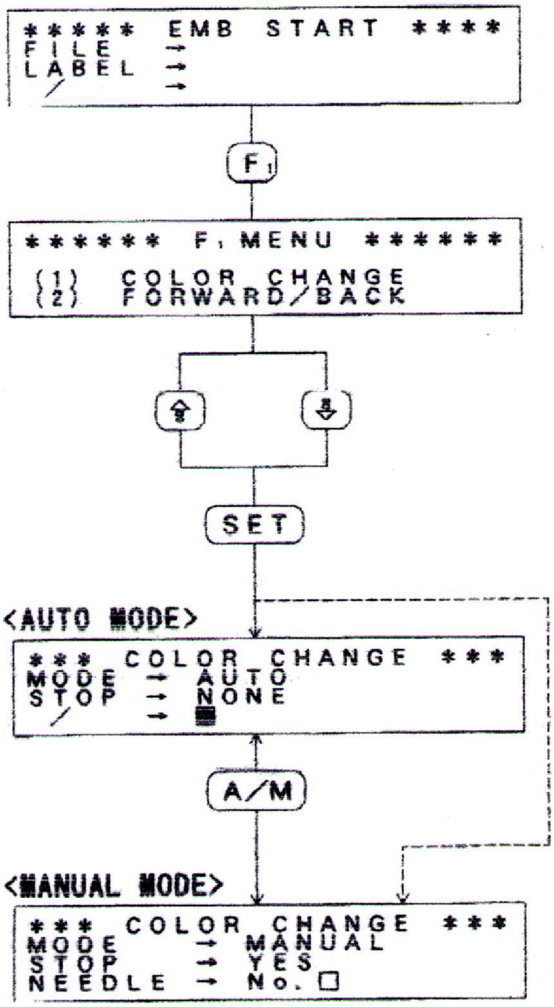
Job-flow (Checking the file information)


*** SELECT DESIGN **
①/② →
LABEL →
STITCH →
A
⇦
⇨
⇧
⇩
ESC
*** INFORMATION 1 **
X SIZE →
+X AREA →
-X AREA →
⇨
⇦
*** INFORMATION 2 **
Y SIZE →
+Y AREA →
-Y AREA →
*** INFORMATION 3 **
COLOR →
END X →
END Y →

1. The menu returns to INFORMATION when the ⇦ or ⇨ key is pressed.
2. The ⇦ or ⇨ key scrolls up or down the INFORMATION 1, 2 and 3 menus.
3. The menu returns to SELECT DATA when the ⇧ ⇩ or ESC key is pressed.

Setting of Needle Bar Change

Setting of the needle bar change can be conducted when the "COLOR CHANGE" menu is appearing on the LCD. For the procedure to display the "COLOR CHANGE" menu, see page 86.
Here, explanation is given with an assumption that the current menu is the "EMB START".



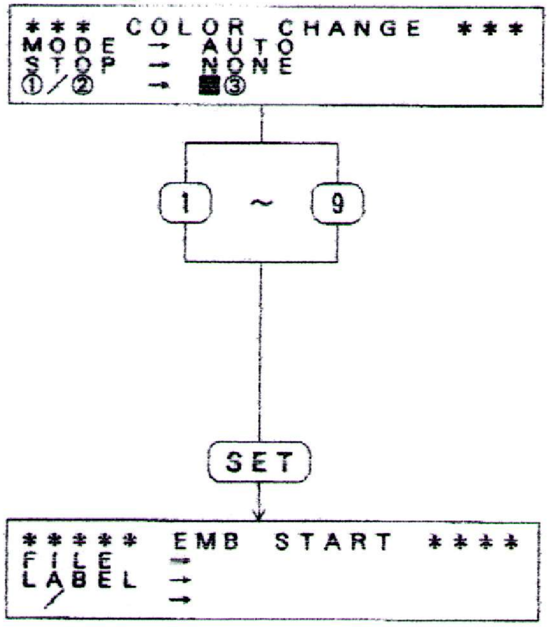
***** EMB START ****
FILE →
LABEL →
/ →
F1
****** F1 MENU ******
(1) COLOR CHANGE
(2) FORWARD/BACK
SET
<AUTO MODE>
*** COLOR CHANGE ***
MODE → AUTO
STOP → NONE
/ → ■
A/M
<MANUAL MODE>
*** COLOR CHANGE ***
MODE → MANUAL
STOP → YES
NEEDLE → No. □

1. Press (F1) key.

2. Operate (↑) and (↓) keys to locate the cursor at (1) and press (SET) key (or press the (1) key.)

3. Pressing the (A/M) key alters the auto and manual modes.

▪ **Setting in auto mode**



```
***  COLOR  CHANGE  ***
MODE  →  AUTO
STOP  →  NONE
①/②   →  ■③
```

```
*****  EMB  START  ****
FILE   →
LABEL  →
/      →
```

4. Enter needle bar numbers in the sequence of color change by the numeral keys.

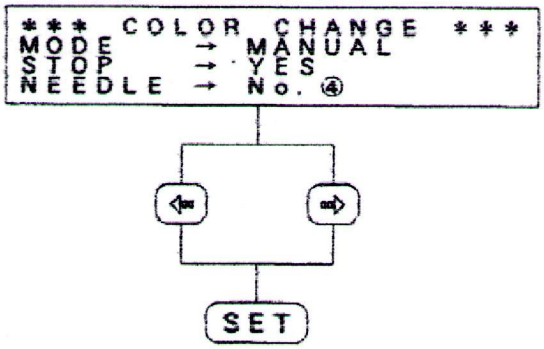
   (1 ~ 9)

   (NOTE 1)

   (NOTE 2)

5. Press SET key.

▪ **Setting in manual mode**



```
***  COLOR  CHANGE  ***
MODE    →  MANUAL
STOP    →  YES
NEEDLE  →  No. ④
```

6. Change the needle bar number by the ⇦ and ⇨ keys.

7. Press SET key.

— **NOTES:**

①: Indicates the sequence of switching needle bars.

②: Indicates total times of needle bar change contained in the file.

③: Indicates the needle bar number entered.

④: Indicates the current needle bar number.

NOTE 1: To correct a needle bar number already entered, press CL key or enter new data over the old data.

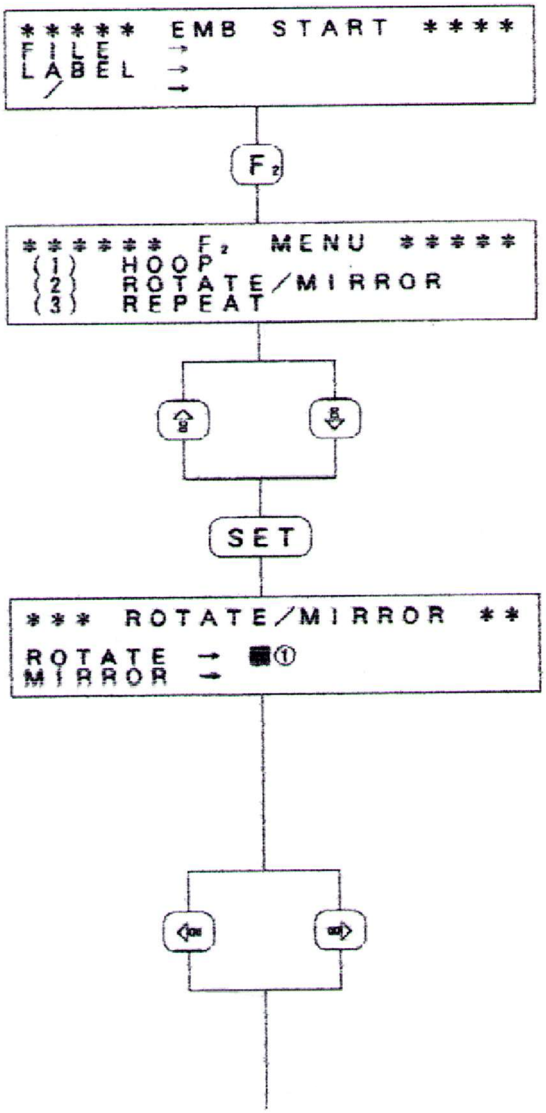
NOTE 2: Pressing STOP key alters OFF and ON on the "STOP" column.

NOTE 3: When setting the needle bar number at step 4 during reading ZSK data from disk reader, the information ② will be shown 00 and can enter up to 99 times of needle bar change.

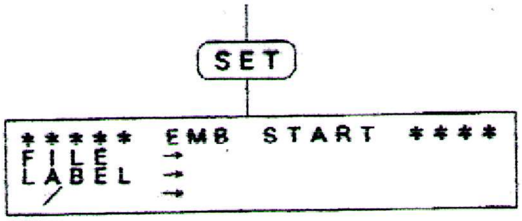
However actual needle bar change is effective from the first needle bar number entered, up to the actual color change number of the data.

Setting of Rotation Angle

- The data can be rotated in embroidery.
- Rotation angles can be selected at 0, 90, 180 or 270 degrees. The default is 0 degree. (The rotating direction is counterclockwize.)
- Setting of the rotation angle can be conducted when the "ROTATE/MIRROR" menu is appearing on the LCD. For the procedure to display the "ROTATE/MIRROR" menu, see page 86. The explanation is given with an assumption that the current menu is the "EMB START".


***** EMB START ****
FILE →
LABEL →
/ →
F_2
****** F_2 MENU *****
(1) HOOP
(2) ROTATE/MIRROR
(3) REPEAT
⇧
⇩
SET
*** ROTATE/MIRROR **
ROTATE → ■0
MIRROR →
⇦
⇨

1. Press (F_2) key.
2. Operate (⇧) and (⇩) keys to locate the cursor at (2) and press (SET) key (or press the (2) key.)
3. Check that the flashing cursor is on the ROTATE line.
   (NOTE 1)
4. Select a desired rotation angle using the (⇦) or (⇨) key.
   (The angle alters 0, 90, 180 and 270 degrees.)



```
***** EMB  START  ****
FILE   →
LABEL  →
       →
```

5. Press (SET) key.

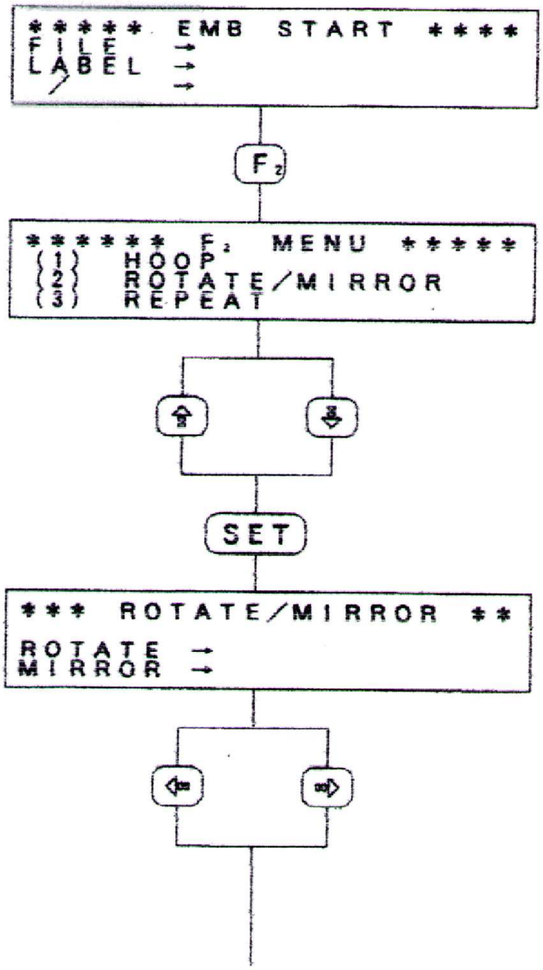
NOTES:

①: Indicates the rotation angle entered.

NOTE 1: If the flashing cursor is on the Mirror line, move the cursor to the Rotation line using the (⇧) or (⇩) key.

Mirror Setting

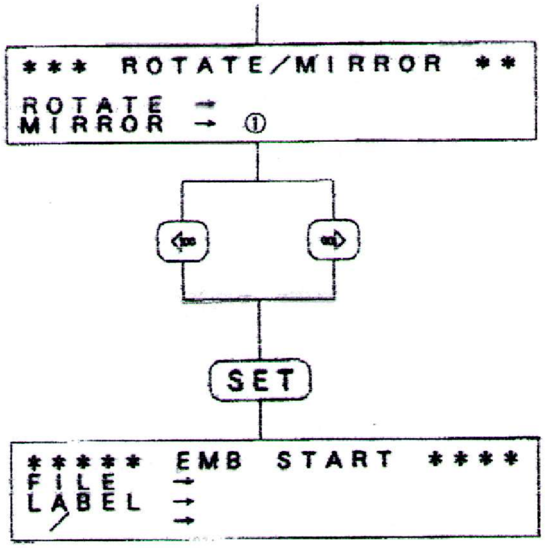
- With this function, the inverted data (mirror image pattern) can be embroidered.
- Choices of inversion types are none (no inversion), X (inversion against X axis) and Y (inversion against Y axis).
- The default is "off".
- The inversion setting can be conducted when the "ROTATE/MIRROR" menu is appearing on the LCD. For the procedure to display the "ROTATE/MIRROR" menu, see page 86. Explanation is given with an assumption that the current menu is the "EMB START".


***** EMB START ****
FILE →
LABEL →
/ →
F2
****** F2 MENU *****
(1) HOOP
(2) ROTATE/MIRROR
(3) REPEAT
SET
*** ROTATE/MIRROR **
ROTATE →
MIRROR →

1. Press (F2) key.

2. Operate (⇧) and (⇩) keys to locate the cursor at (2) and press (SET) key (or press the (2) key.)

3. Operate (⇧) and (⇩) keys to locate the flashing cursor to MIRROR line.


*** ROTATE/MIRROR **
ROTATE →
MIRROR → ①
◁
▷
SET
***** EMB START ****
FILE →
LABEL →
→

4. Select the mirror inversion type using the (◁) or (▷) key. (The inversion type alters OFF, X and Y.)

5. Press (SET) key.

— **NOTES:**

①: indicates the mirror inversion type selected.

Setting of Repeat

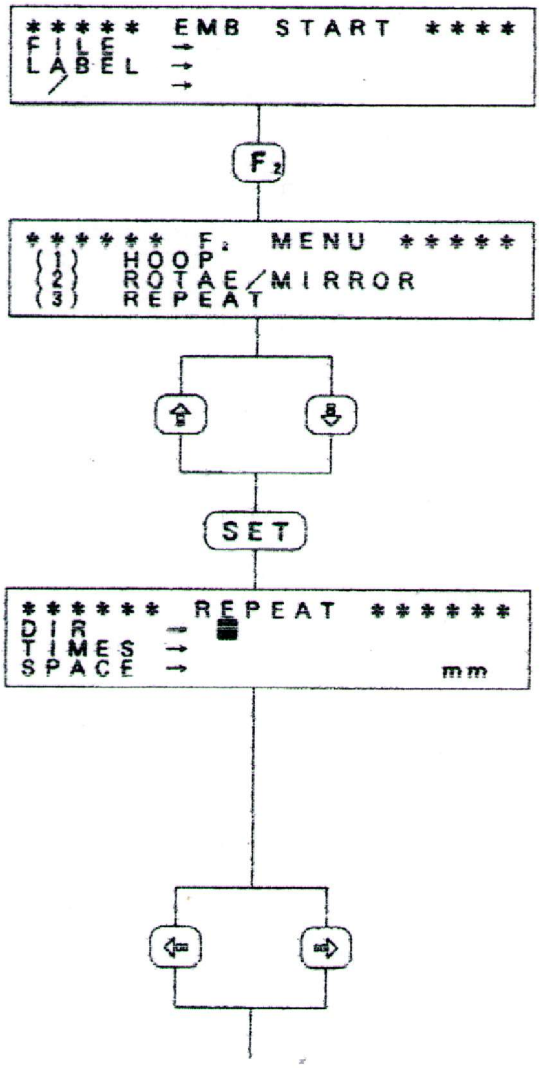
- The same data can be embroidered in the vertical (Y) or horizontal (Y) direction by setting of repeating number.
- Selection:

Type (direction) : X (X-axis or horizontal) or Y (Y-axis or vertical)
Times (repeating numbers) : 1 to 99
Interval (interval between patterns): 0 to 255 mm

- The default is X for the Type, 1 for the Cycles and 0 for the Interval.

DIR: X, TIMES: 1, SPACE: 0

- The repeat setting can be conducted when the Repeat menu is appearing on the LCD. For the procedure to display the "REPEAT" menu, see page 86. Explanation is given with an assumption that the current menu is the "EMB START".

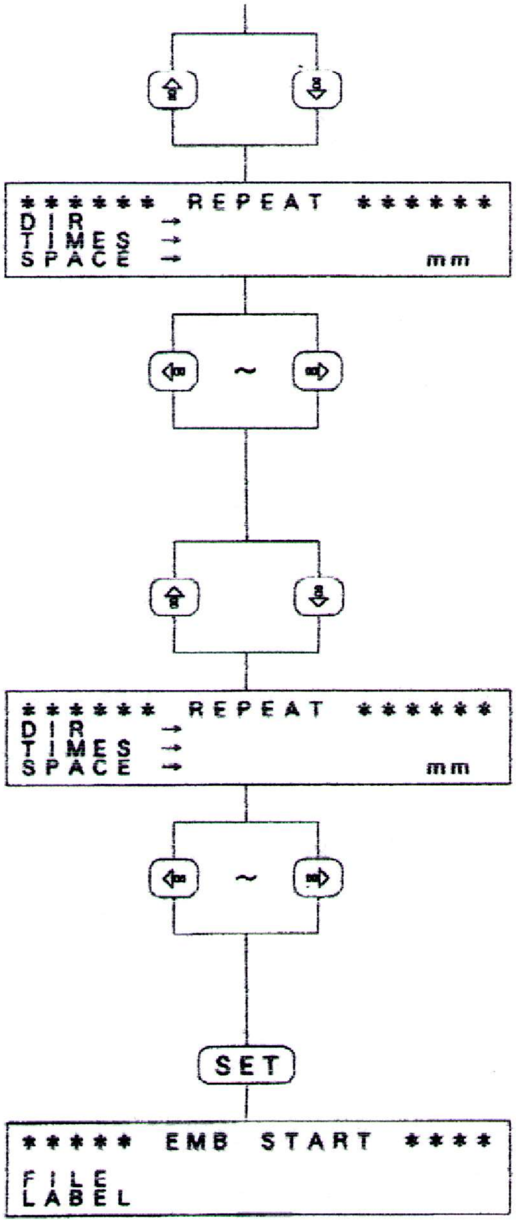


```
*****  EMB  START  ****
FILE    →
LABEL   →
 /      →
```

```
******  F2  MENU  *****
(1)  HOOP
(2)  ROTAE/MIRROR
(3)  REPEAT
```

```
******  REPEAT  ******
DIR     → ■
TIMES   →
SPACE   →            mm
```

1. Press F$_2$ key.
2. Operate ⇧ and ⇩ keys to locate the cursor at (3) and press SET key (or press the 3 key).
3. Check that the flashing cursor is at the DIR line. (The type alters horizontal and vertical.) (NOTE 1)
4. Select the direction using the ⇦ or ⇨ keys.


⇧
⇩
****** REPEAT ******
DIR →
TIMES →
SPACE → mm
⇦ ~ ⇨
⇧
⇩
****** REPEAT ******
DIR →
TIMES →
SPACE → mm
⇦ ~ ⇨
SET
***** EMB START ****
FILE
LABEL

5. Shift the flashing cursor to the TIMES line using the (⇧) or (⇩) key.

6. Enter the repeating number using the (⇦) or (⇨) keys.

   (⇨) : The value increments.
   (⇦) : The value decrements.

7. Shift the flashing cursor to the SPACE line using the (⇧) or (⇩) key.

8. Enter the interval number using the (⇦) or (⇨) keys.

   (⇨) : The value increments.
   (⇦) : The value decrements.

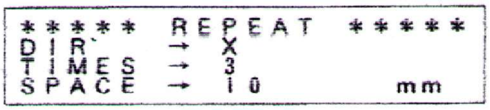
9. Press (SET) key.

— **NOTES:**

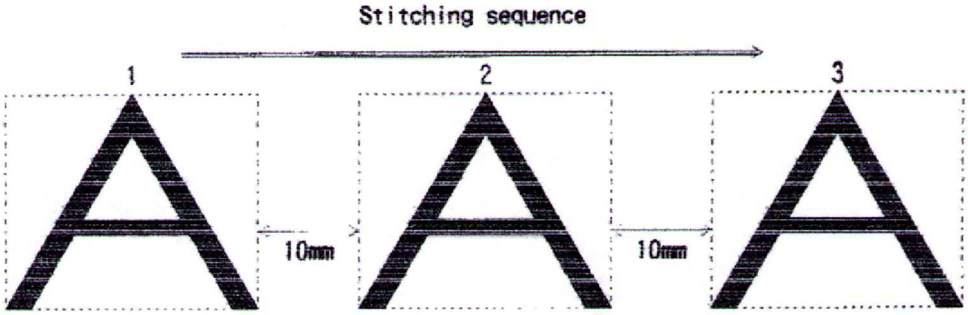
NOTE 1: If the flashing cursor is not at the DIR line, shift the cursor to the line using the (⇩) or (⇧) key.

<Example 1:>

The actual embroidery is as shown below when repeat parameters are set to DIR: X axis (horizontal), TIMES: 3, SPACE: 10 (NOTE 2)



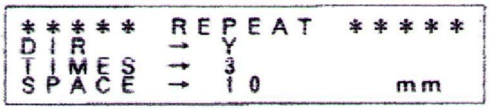
```
*****  REPEAT  *****
DIR`    →  X
TIMES   →  3
SPACE   →  10       mm
```



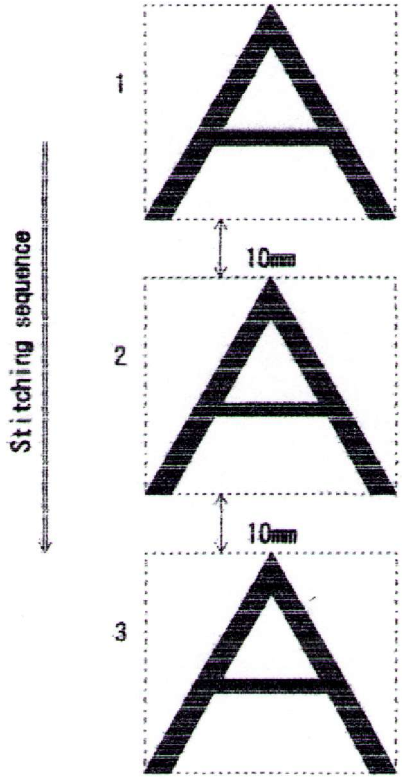
Stitching sequence
1
2
3
10mm
10mm

<Example 2:>

The actual embroidery is as shown below when repeatparameters are set to DIR : Y axis (Vertical), TIMES : 3, SPACE : 10 (NOTE 2)



```
*****  REPEAT  *****
DIR     →  Y
TIMES   →  3
SPACE   →  10       mm
```



1
Stitching sequence
10mm
2
10mm
3

— **NOTES:**

NOTE 2 : In the above examples, the rotation angle must be 0° and Mirror be set to "off".

Combined Use of Edit Functions

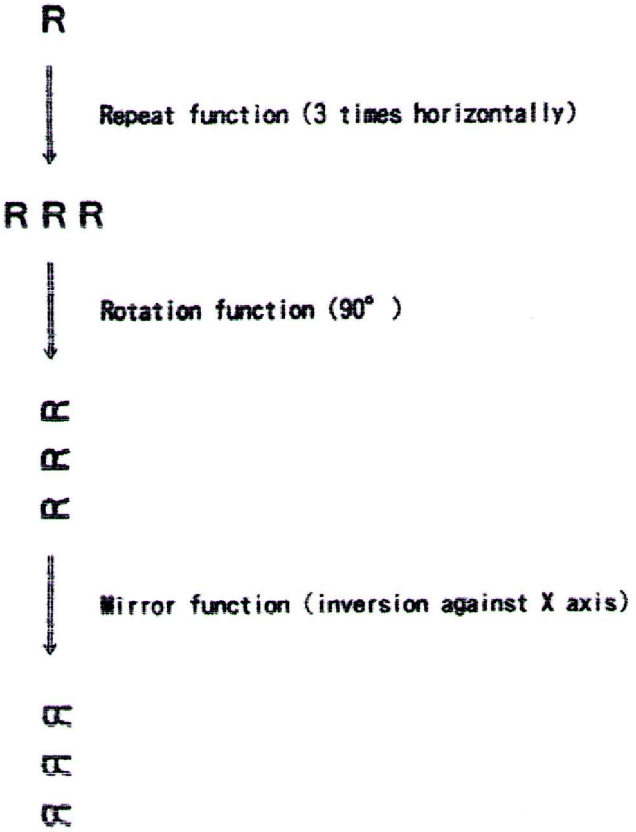
The rotation, mirror and repeat functions are available as the edit functions. When these functions are used in combination, priority is given, in the order of to the repeat, rotation and mirror functions.

Example: When rotation, mirror and repeat functions are used in combination with the following parameter settings:

```
*** ROTATE/MIRROR **
ROTATE → 90°
MIRROR → X
```

```
****** REPEAT ******
DIR   → X
TIMES → 3
SPACE → 0         mm
```

Original data

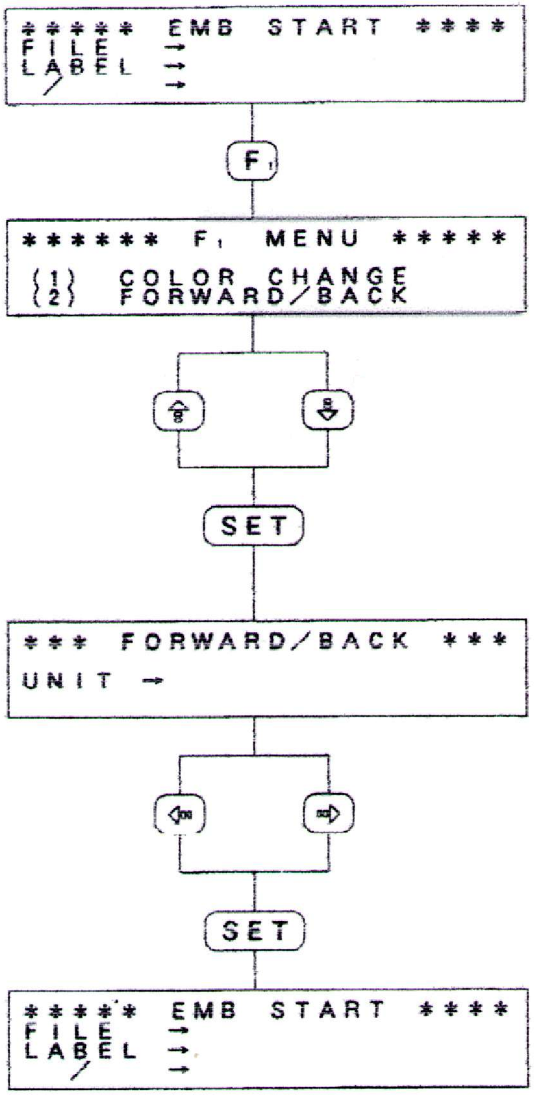

R
Repeat function (3 times horizontally)
RRR
Rotation function (90°)
Mirror function (inversion against X axis)

Actual patterns embroidered

Forward/Back Setting

① Setting procedure

- The number of forward/back stitches can be selected either in the unit of when the ⇑ or ⇓ key is pressed 1 stitch or color change.
- The default is 1 stitch.
- The forward/back setting can be conducted when the "FORWARD/BACK" menu is appearing on the LCD. For the procedure to display the "FORWARD/BACK" menu, see page 86. Explanation is given with an assumption that the current menu is the "EMB START".



***** EMB START ****
FILE →
LABEL →
/ →
F1
****** F1 MENU *****
(1) COLOR CHANGE
(2) FORWARD/BACK
SET
*** FORWARD/BACK ***
UNIT →
SET
***** EMB START ****
FILE →
LABEL →
/ →

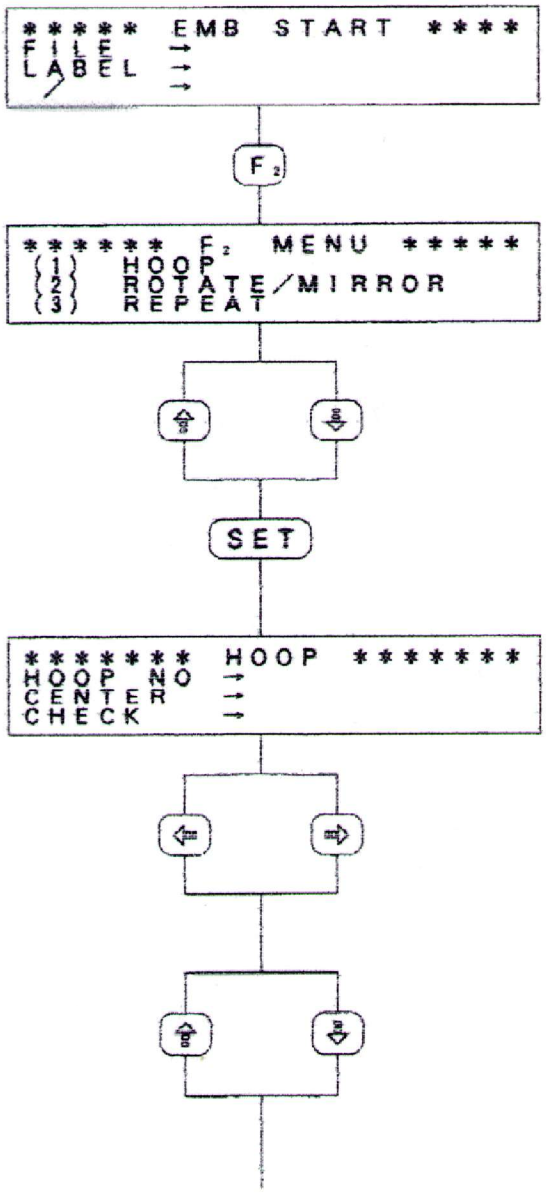
1. Press F1 key.
2. Operate ↑ and ↓ keys to locate the cursor at (2) and press SET key (or press the 2 key).
3. Select the number of forward/back stitches using the ⇦ or ⇨ key.
4. Press SET key.

② Operation procedure

- The ⇑ and ⇓ keys are effective when the menu is "EMB START" or "EMB END" menu.
- When the ⇑ or ⇓ key is pressed one time, the hoop will be automatically forwarding/backing in to 1 stitch or to the next color changing point directly.
- When the ⇑ or ⇓ key is continuously pressed for over 1 second, the hoop begins to forward/back continuously. Press STOP (□) key to stop the hoop.
- A few seconds are required for quick back to color change point.
- Do not press the emergency stop button when the stitch count increments or decrements during calculation.

Setting of Centering Function

- The starting point of the data is automatically set to the center of the embroidery hoop.
- Set the centering parameter to "yes" to use the centering function or "no" not to use the function.
- The default is "no".
- Setting of the centering function can be conducted when the "HOOP" menu is appearing on the LCD. For the procedure to display the "HOOP" menu, see page 86.
  Explanation is given with an assumption that the current menu is the "EMB START".



***** EMB START ****
FILE →
LABEL →
→
F_2
****** F_2 MENU *****
(1) HOOP
(2) ROTATE/MIRROR
(3) REPEAT
⇧
⇩
SET
******* HOOP *******
HOOP NO →
CENTER →
CHECK →
⇦
⇨
⇧
⇩

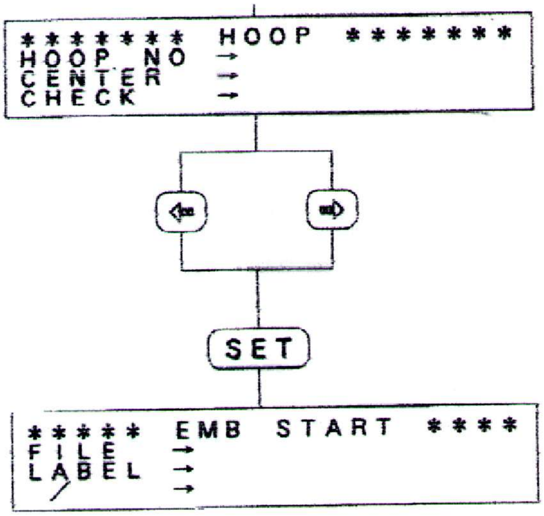
1. Press [F_2] key.

2. Operate [⇧] and [⇩] keys to locate the cursor at (1) and press [SET] key (or press the [1] key).

3. Check that the flashing cursor is at the Hoop No. line.
   (NOTE 1)

4. Select the hoop size to be used for embroidering using the [⇦] or [⇨] key.
   (Twenty types are available.) (NOTE 2)

5. Shift the flashing cursor to the Center line using the [⇧] or [⇩] key.


******* HOOP *******
HOOP NO →
CENTER →
CHECK →
SET
***** EMB START ****
FILE →
LABEL →
→

6. Select on or off for the centering function using the (⇦) or (⇨) key.

7. Press (SET) key.

(NOTE 3)

NOTES:

NOTE 1: If the flashing cursor is not at the Hoop No. line, shift the cursor to HOOP NO line using the (⇧) or (⇩) key.

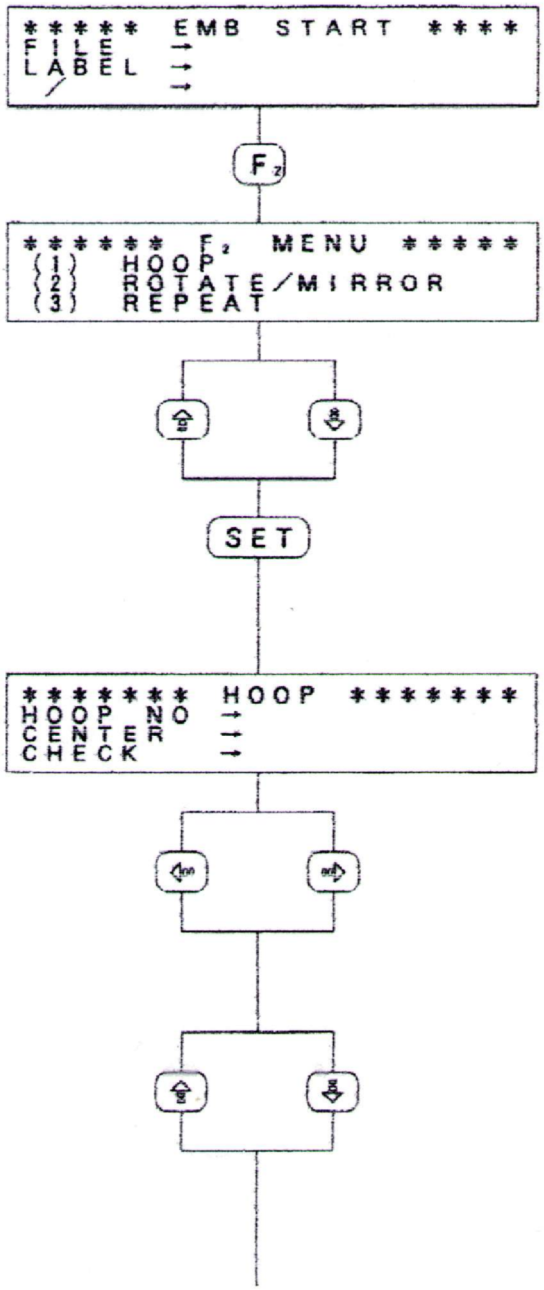
NOTE 2: As to hoop sizes, see page 65.

NOTE 3: The Interference check setting can be conducted by shifting the flashing cursor to the CHECK line using the (⇧) or (⇩) key before pressing (SET) key.

Setting of Hoop Interference Check Function

- It is possible to disable start of embroidering when the embroidering range exceeds the hoop size.
- Set the parameter to on to use this function, while off not to use.
- The default is off.
- The interference check function can be conducted when the "HOOP" menu is appearing on the LCD. For the procedure to display the "HOOP" menu, see page 86.

  Explanation is given with an assumption that the current menu is the "EMB START".



```
*****  EMB  START  ****
FILE   →
LABEL  →
/      →
```

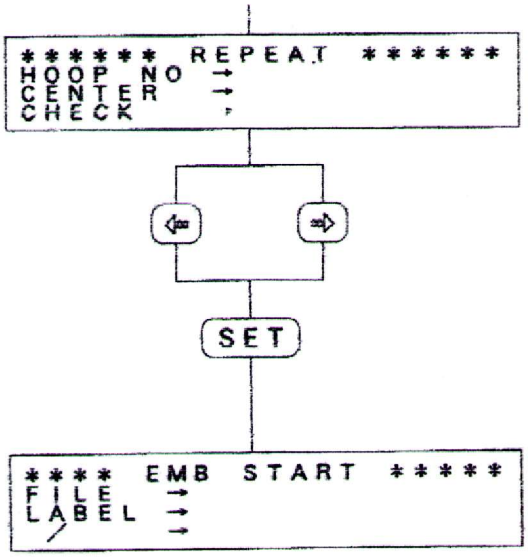
```
****** F2  MENU  *****
(1)  HOOP
(2)  ROTATE/MIRROR
(3)  REPEAT
```

```
*******  HOOP  *******
HOOP NO  →
CENTER   →
CHECK    →
```

1. Press F_2 key.
2. Operate ⇧ and ⇩ keys to locate the cursor at (1) and press SET key (or press the 1 key).
3. Check that the flashing cursor is at the HOOP NO. line. (Twenty types are available.)

   (NOTE 1)
4. Select the embroidery hoop size using the ⇦ or ⇨ key.

   (NOTE 2)
5. Shift the flashing cursor to the CHECK line using the ⇧ or ⇩ key.


****** REPEAT ******
HOOP NO →
CENTER →
CHECK →
⇦
⇨
SET
**** EMB START *****
FILE →
LABEL →
→

6. Select on or off for the interference check function using the ⇦ or ⇨ keys.

7. Press SET key.

(NOTE 3)

— **NOTES:**

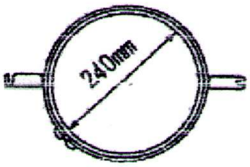
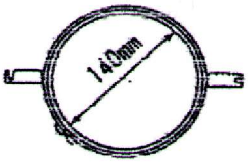
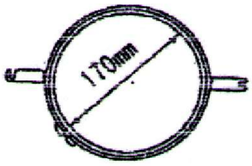
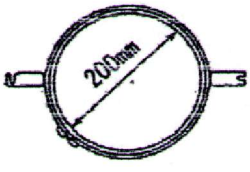
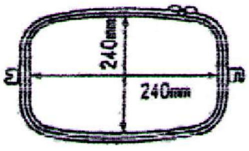
NOTE 1: If the flashing cursor is not at the **HOOP NO.** line, shift it to the line using the ⇧ or ⇩ key.

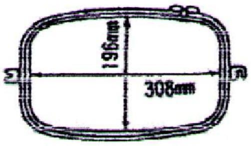
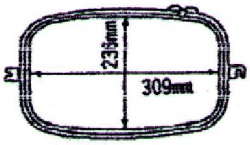
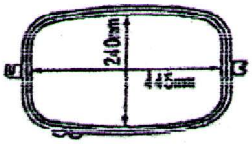
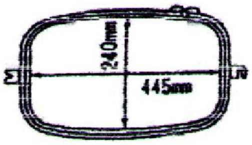
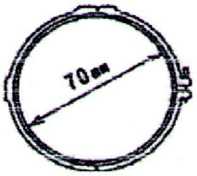
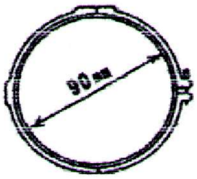
NOTE 2: As for the hoop sizes see page 65.

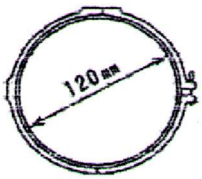
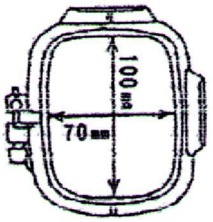
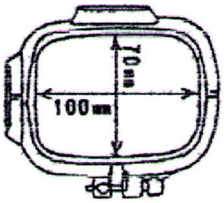
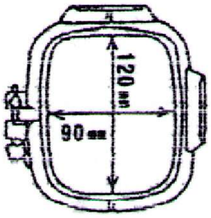
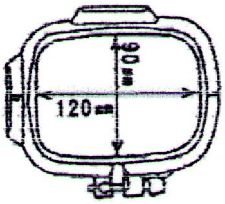
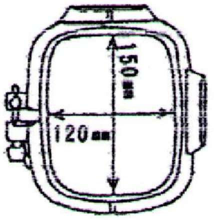
NOTE 3: The centering setting may be conducted by shifting the flashing cursor to the **CENTER** line using the ⇧ or ⇩ key before pressing SET key.

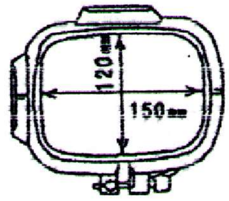
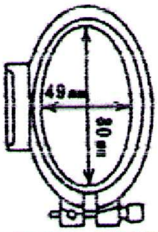
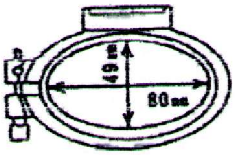
Setting of Hoop Size

The hoop size to be used for embroidering is specified using the **HOOP NO.** row of the "**HOOP**" menu. The hoop type and size can be selected from Hoop Nos. 1 and 20 listed in the following tables.

Hoop No.	Hoop size	Hoop type and size	
0 1	1 ○ 240	Set screw type hoop	
0 2	1 ○ 140		
0 3	1 ○ 170		
0 4	○ 200		
0 5	240 × 240		 240mm 240mm

Hoop No.	Hoop size	Hoop type and size	
06	308 × 196	Set screw type hoop	 196mm 308mm
07	309 × 236		 236mm 309mm
08	445 × 240		 240mm 445mm
09	445 × 290		 240mm 445mm
10	○ 70	Magnet type hoop	
11	○ 90		

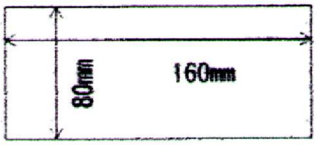
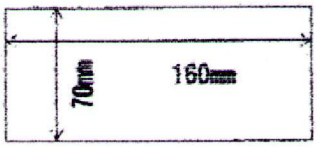
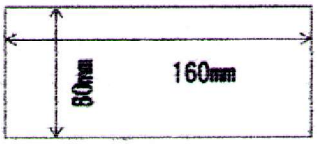
Hoop No.	Hoop size	Hoop type and size	
12	○ 120	Magnet type hoop	
13	70 × 100		
14	100 × 70		
15	90 × 120		
16	120 × 90		
17	120 × 150		 150mm 120mm

Hoop No.	Hoop size	Hoop type and size	
1 8	150 × 120	Magnet type hoop	 120mm 150mm
1 9	49 × 80		
2 0	80 × 49		

Setting of Embroidering with Cap Frame

Operation procedures for embroidering with Cap Frame are almost the same as those for the flat hoop, with the following exceptions:

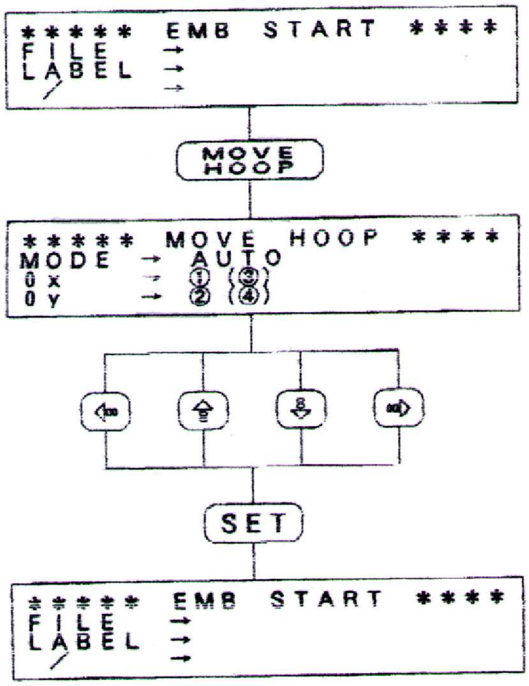
1. Set switch 7 of DS2 to on before turning power on.
2. Only three hoop numbers can be selected on the HOOP NO. row of the "HOOP" menu while the number of hoop sizes selectable for the flat hoop is 20. Select one of the three hoop sizes listed below.

Hoop No.	Hoop code	Hoop type and size
0 1	160 × 80	
0 2	160 × 70	
0 3	160 × 60	

Setting of Move Hoop (Offset) Point

- The hoop can be moved to the pre-set point in order to make operation, such as fabric setting, easier during embroidering.
- The default is the center of the hoop.
- The point setting can be conducted after pressing (MOVE HOOP) key, displaying the "MOVE HOOP" menu, when the Start of Embroidery menu is appearing on the LCD.

① Setting procedure



```
*****  EMB  START  ****
FILE   →
LABEL  →
 /     →
```

```
*****  MOVE  HOOP  ****
MODE   →  AUTO
0x     →  ① (③)
0y     →  ② (④)
```

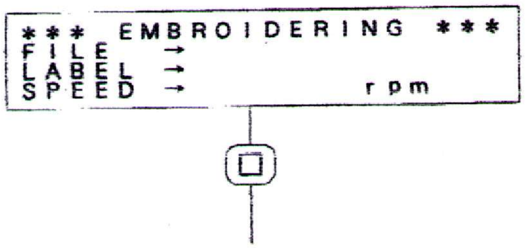
```
*****  EMB  START  ****
FILE   →
LABEL  →
 /     →
```

1. Press (MOVE HOOP) key.

2. Determine the position of the hoop to be moved using (⇦), (⇧), (⇩) and (⇨) keys.

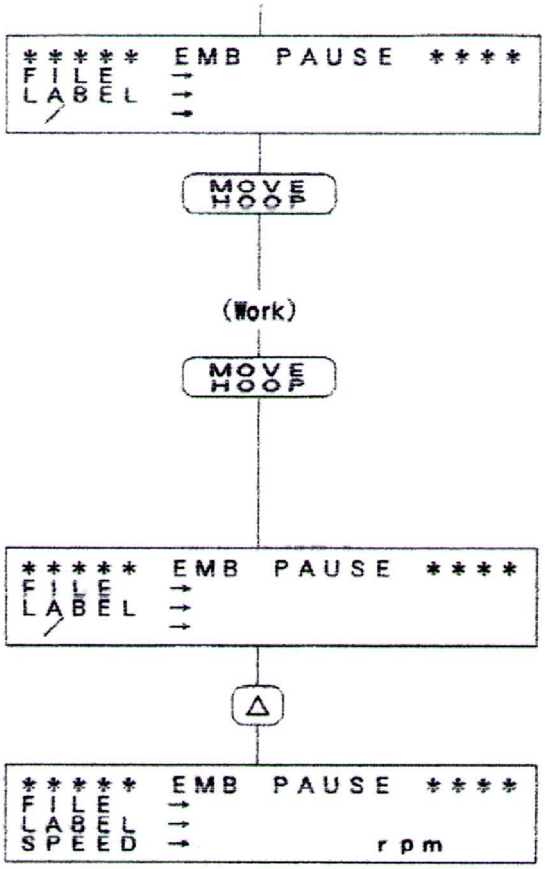
3. Press (SET) key.

② Work procedure



```
***  EMBROIDERING  ***
FILE   →
LABEL  →
SPEED  →             rpm
```

1. Press STOP ((□)) key.


***** EMB PAUSE ****
FILE →
LABEL →
/ →
MOVE HOOP
(Work)
MOVE HOOP
***** EMB PAUSE ****
FILE →
LABEL →
/ →
△
***** EMB PAUSE ****
FILE →
LABEL →
SPEED → rpm

2. Press MOVE HOOP key.

   (The hoop moves to the selected position.)

3. Conduct the work.

4. Press MOVE HOOP key.

   (The hoop returns to the position it was before pressing MOVE HOOP key in step 2.)

   (NOTE 1)

5. Press START (△) key.

NOTES:

①: Current X coordinates of hoop

②: Current Y coordinates of hoop

③: Current position value for X coordinates

④: Current position value for Y coordinates

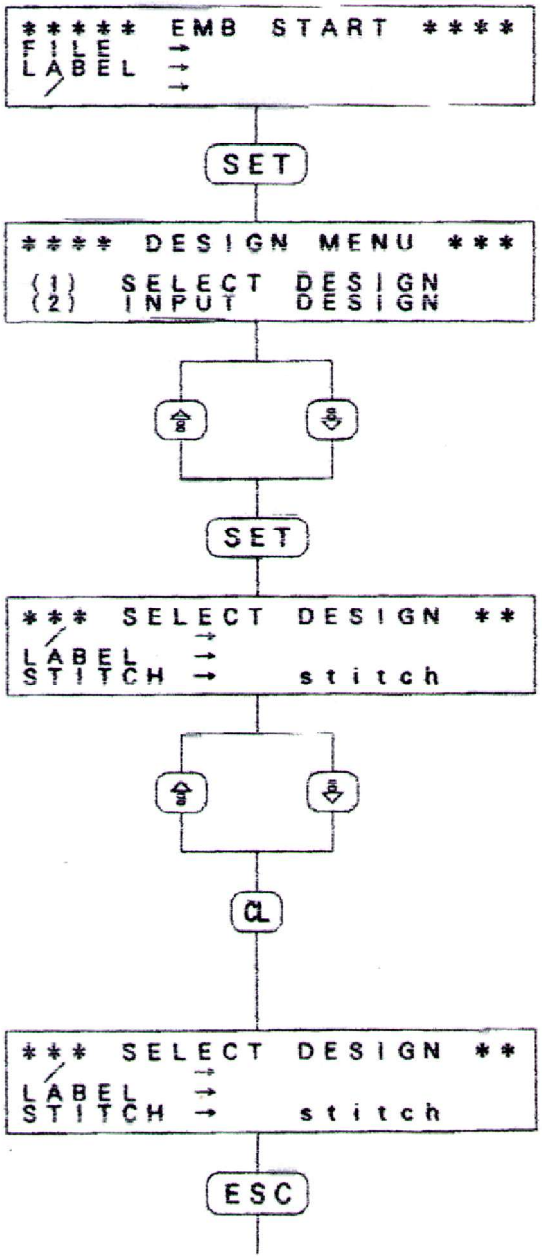
NOTE 1: The result is the same when START key (△) is pressed. as instructed in step 5. without pressing MOVE HOOP key.

Delet the Data from Embroidery Machine Memory

There are two methods to delet the data stored in the embroidery machine memory, one is to delet the data one by one and the other is delet all data at one time.

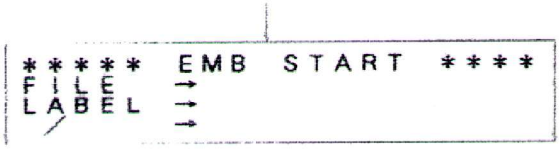
① Delet the data one by one

The data can be deleted when the "SELECT DESIGN" menu is appearing on the LCD screen. For the procedure to call the "SELECT DESIGN" menu, see page 86. The following procedure is explained with an assumption that the "EMB START" menu is appearing on the LCD screen.



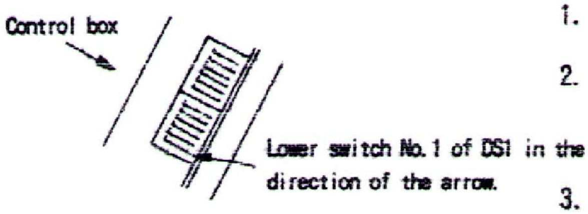
***** EMB START ****
FILE →
LABEL →
→
SET
**** DESIGN MENU ***
(1) SELECT DESIGN
(2) INPUT DESIGN
SET
*** SELECT DESIGN **
→
LABEL →
STITCH → stitch
CL
*** SELECT DESIGN **
→
LABEL →
STITCH → stitch
ESC

1. Press SET key.
2. Operate ⇧ and ⇩ keys to locate the cursor at (1) and press SET key.
3. Select a file to be deleted by using the ⇧ or ⇩ key.
4. Press CL key.
   The selected data is cleared.
5. Press ESC key.

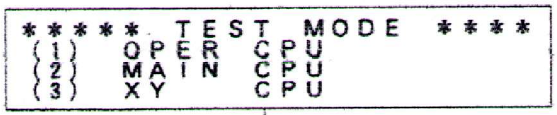


```
*****  EMB  START  ****
FILE   →
LABEL  →
       →
```

② **Delet all data at one time**



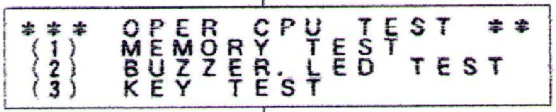
1. Turn power off.
2. Set switch No.1 of DS1 to on.
3. Turn power on.



```
*****  TEST  MODE  ****
(1)   OPER  CPU
(2)   MAIN  CPU
(3)   XY    CPU
```

SET

4. Check the flashing cursor is at (1) **OPER CPU** and then press SET key. (**NOTE 1**)



```
***  OPER  CPU  TEST  **
(1)  MEMORY  TEST
(2)  BUZZER. LED  TEST
(3)  KEY  TEST
```

SET

5. Check the flashing curcor is at (1) **MEMORY TEST** and then press SET key. (**NOTE 2**)

(The buzzer is activated after a few seconds.)

6. Wait until a peep buzzer tone is heard. All data stored in the memory are now deleted.

Turn power off.

7. Turn power off.
8. Set switch No.1 of DS1 to off. The machine is ready for the normal operation.

NOTES:

NOTE 1: Do not set the curcor the **MAIN CPU** or **XY CPU**.

NOTE 2: Do not set the curcor to **BUZZER, LED TEST** or **KEY TEST**.

Standard Operation Procedure in Embroidering

1. Turn power on.

2. Set embroidery data using one of the following three methods:

   (1) Read data from the AMC330.

   (2) Read data from the AMC388.

   (3) Call embroidery data stored in the memory of the embroidery machine.

3. Conduct the needle bar change (thread change) setting.

   The above completes the preparation and the machine is ready to start.

   When various functions are used, typical operation procedures are as explained below:

4. Conduct setting of the hoop to be used.

5. Set the interference check function to on.

6. Enter parameters for the inversion, rotation and repeat functions.

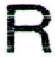
7. Conduct the "MOVE HOOP" menu.

8. Determine a starting point using the TRACE and ⇧, ⇩, ⇦ and ⇨ keys.

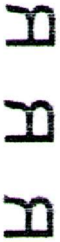
9. Start a operation cycle.

   Typical series of operation procedures are explained on the following pages.

The procedures required to edit embroidery data stored on a floppy disk and initiate an embroidery times are explained. The parameters to be edited are 90° for the rotation, Y axis for the inversion, Y direction for the repeat function and 10 mm for the interval between patterns. The embroidery data is a character of "R".



Data stored on the floppy disk

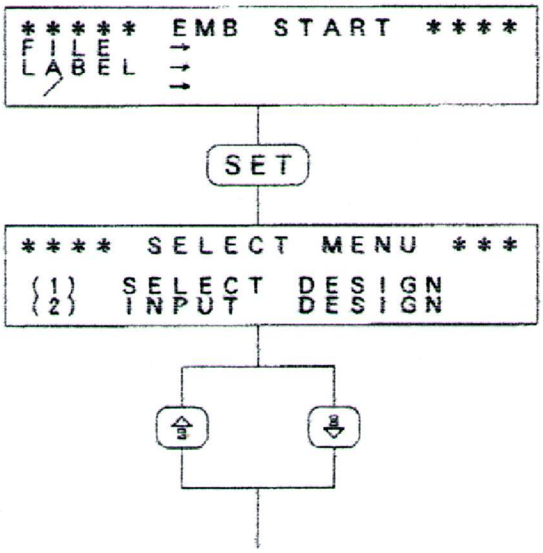


Actual pattern embroidered

1. Set switch 8 of DS2 on the side of the control box to on.
2. Turn power on.

   (The following procedures are when the menu upon turning power on is the "EMB START" menu.)

- If the menu upon turning power on is "INSERT DISK" menu, begin from step (5).
- When "SELECT MODE" menu is appearing on the LCD, press SET key to return "EMB START" menu.

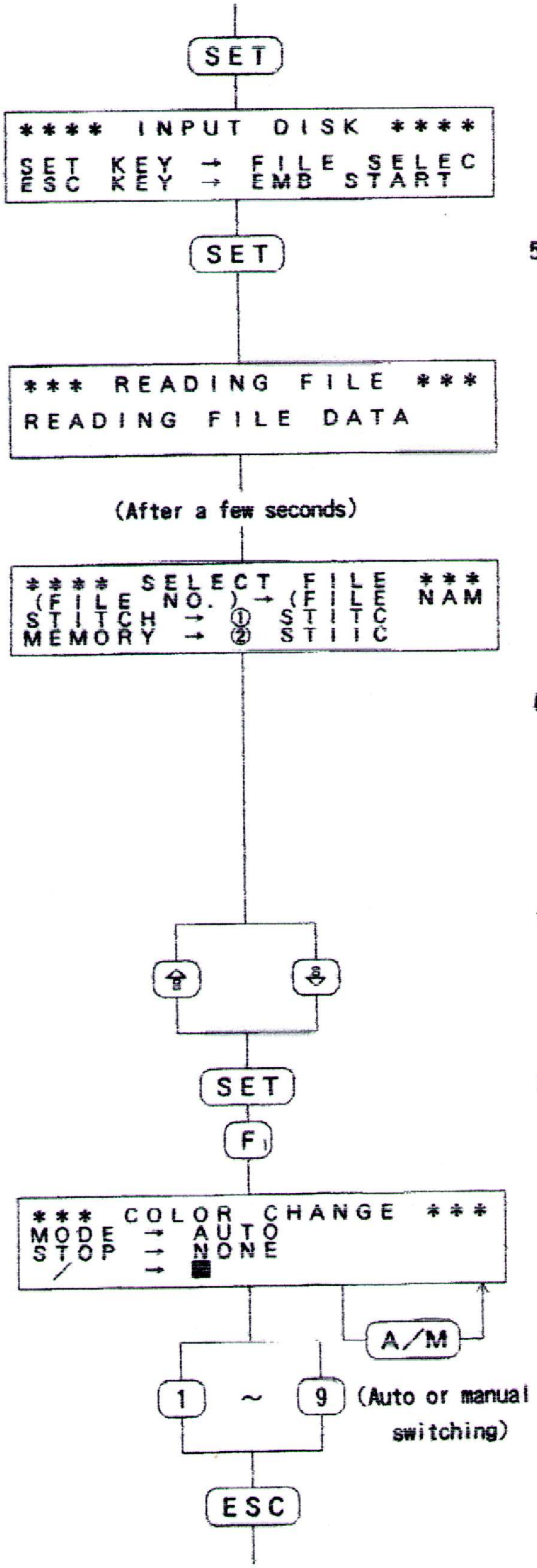


```
*****  EMB  START  ****
FILE   →
LABEL  →
       →
```

```
****  SELECT  MENU  ***
(1)  SELECT  DESIGN
(2)  INPUT   DESIGN
```

3. Press SET key.

4. Operate ⇧ and ⇩ keys to locate the cursor at (2) and press SET key.



```
**** INPUT DISK ****
SET KEY → FILE SELEC
ESC KEY → EMB START
```

```
*** READING FILE ***
READING FILE DATA
```

```
**** SELECT FILE ***
(FILE NO.)→(FILE NAM
STITCH → ① STITC
MEMORY → ② STIIC
```

```
*** COLOR CHANGE ***
MODE → AUTO
STOP → NONE
/    → ■
```

5. Insert the floppy disk to the disk reader (AMC330) and press SET key.

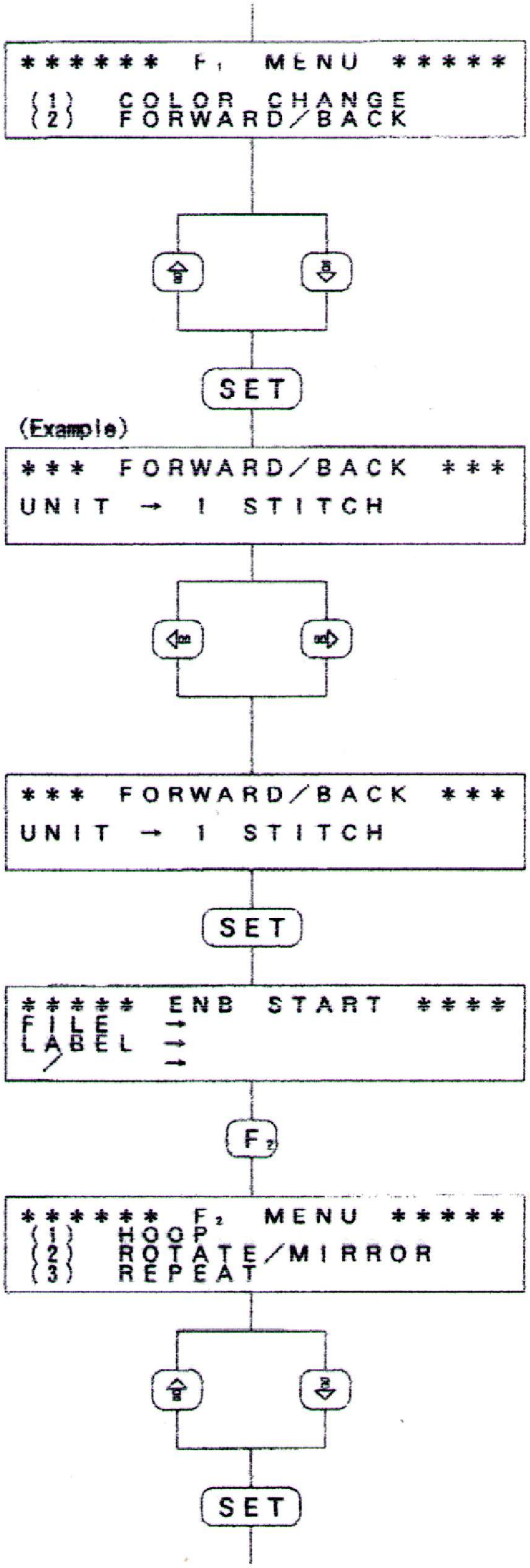
6. Check that the value of ① (total stitches of the design) is smaller than that of ② (remaining memory of the embroidery machine). If not, see page 45.

7. Display the embroidery data file name containing the "R" character on the LCD screen by using the ⇧ or ⇩ key.

8. Press SET key followed by F1 key.

9. Enter needle bar numbers in the sequence of color change using the numeral keys.

10. Press ESC key.


****** F₁ MENU *****
(1) COLOR CHANGE
(2) FORWARD/BACK
⇧
⇩
SET
(Example)
*** FORWARD/BACK ***
UNIT → 1 STITCH
⇦
⇨
*** FORWARD/BACK ***
UNIT → 1 STITCH
SET
***** ENB START ****
FILE →
LABEL →
/ →
F₂
****** F₂ MENU *****
(1) HOOP
(2) ROTATE/MIRROR
(3) REPEAT
⇧
⇩
SET

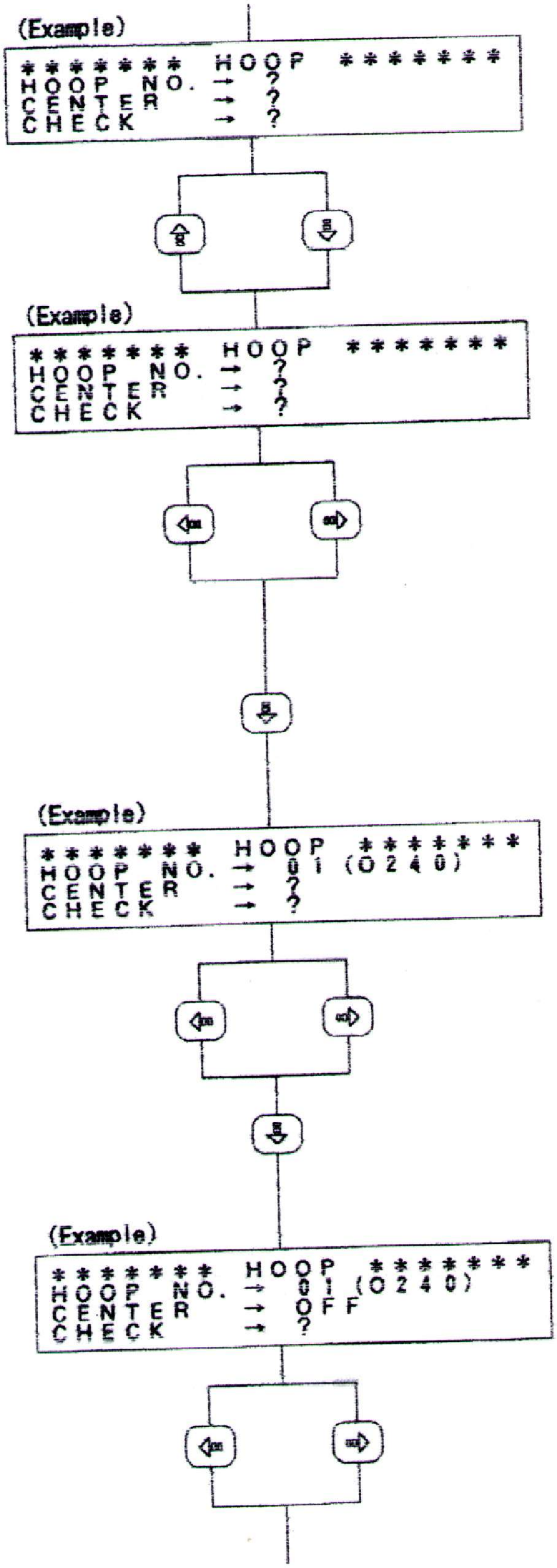
11. Operate ⇧ and ⇩ keys to locate the cursor at (2) and press SET key (or press the 2 key).

12. Set the number of forward/back stitches using the ⇦ or ⇨ key. (Standard is 1 stitch.)

13. Press SET key.

14. Press F₂ key.

15. Operate ⇧ and ⇩ keys to locate the cursor at (1) and press SET key (or press the 1 key).



(Example)

```
******* HOOP *******
HOOP NO. → ?
CENTER   → ?
CHECK    → ?
```

16. Operate ⇧ and ⇩ keys to locate the cursor at the **HOOP NO.** line.

(Example)

```
******* HOOP *******
HOOP NO. → ?
CENTER   → ?
CHECK    → ?
```

17. Set the hoop number according to the hoop size to be used using the ⇦ or ⇨ key. (See the table listing hoop numbers and sizes on page 65.)
18. Press the ⇩ key. (The flashing cursor moves to the **CENTER** line.)

(Example)

```
******* HOOP *******
HOOP NO. → 01 (0240)
CENTER   → ?
CHECK    → ?
```

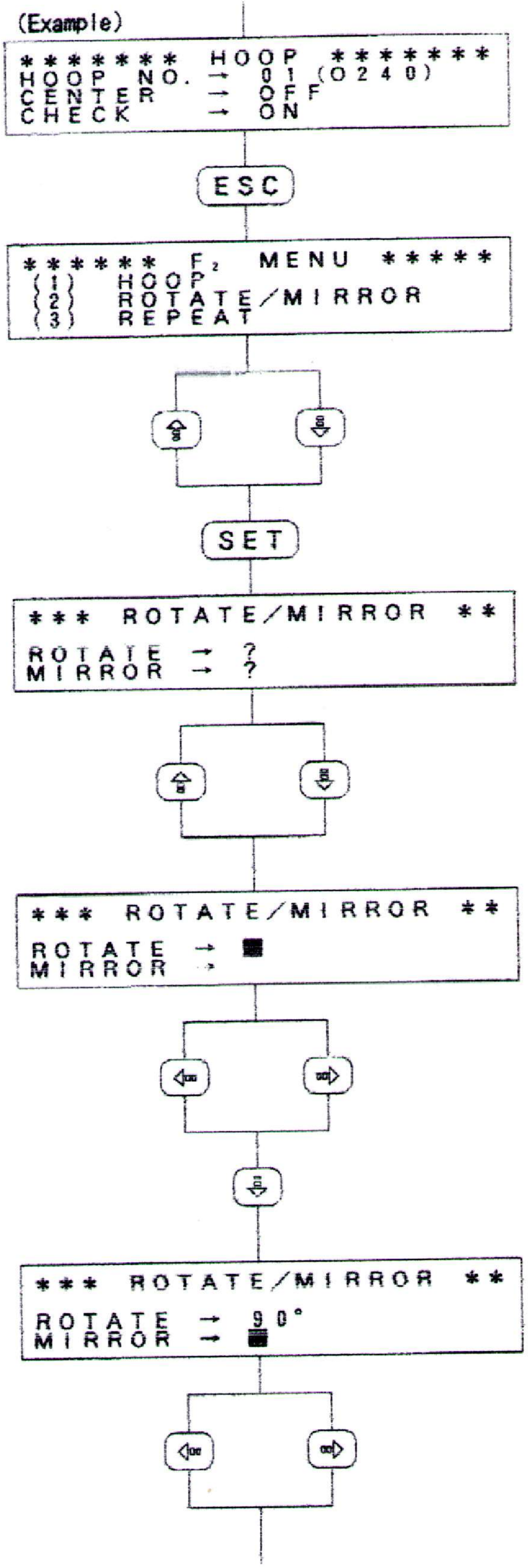
19. Set the centering parameter to off using the ⇦ or ⇨ key.
20. Press the ⇩ key. (The flashing cursor moves to the **CHECK** line.)

(Example)

```
******* HOOP *******
HOOP NO. → 01 (0240)
CENTER   → OFF
CHECK    → ?
```

21. Set the interference parameter to on using the ⇦ or ⇨ key.

(Example)



```
******* HOOP *******
HOOP NO. → 01 (0240)
CENTER   → OFF
CHECK    → ON
```

```
****** F2  MENU *****
(1)  HOOP
(2)  ROTATE/MIRROR
(3)  REPEAT
```

```
***  ROTATE/MIRROR  **
ROTATE → ?
MIRROR → ?
```

```
***  ROTATE/MIRROR  **
ROTATE → ■
MIRROR →
```

```
***  ROTATE/MIRROR  **
ROTATE → 90°
MIRROR → ■
```

22. Press ESC key.

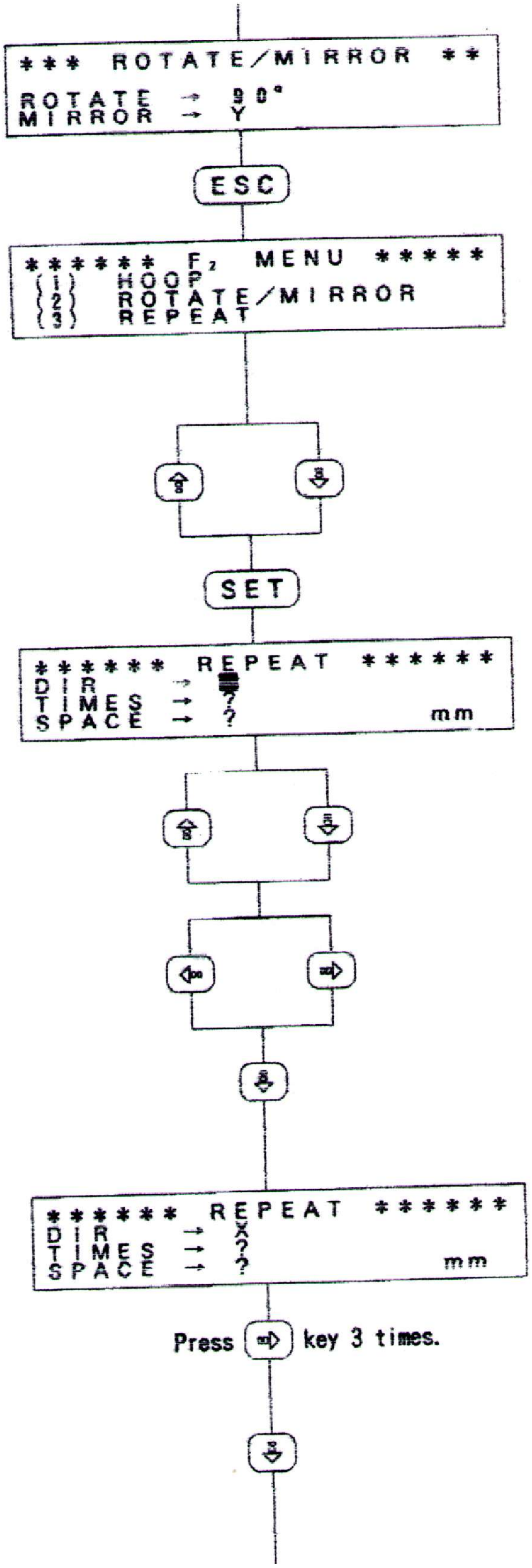
23. Operate ⇧ and ⇩ keys to locate the cursor at (2) and press SET key (or press the 2 key).

24. Locate the flashing cursor at the **ROTATE** line using the ⇧ or ⇩ key.

25. Set the rotation angle parameter to 90° using the ◁ or ▷ key.

26. Press the ⇩ key. (The flashing cursor moves to the **MIRROR** line.)

27. Set the mirror parameter to Y using the ◁ or ▷ key.


*** ROTATE/MIRROR **
ROTATE → 90°
MIRROR → Y
ESC
****** F2 MENU *****
(1) HOOP
(2) ROTATE/MIRROR
(3) REPEAT
⇧
⇩
SET
****** REPEAT ******
DIR →
TIMES → ?
SPACE → ? mm
⇧
⇩
⇦
⇨
⇩
****** REPEAT ******
DIR → X
TIMES → ?
SPACE → ? mm
Press ⇨ key 3 times.
⇩

28. Press ESC key.

29. Operate ⇧ and ⇩ keys to locate the cursor at (3) and press SET Key (or press the 3 key).

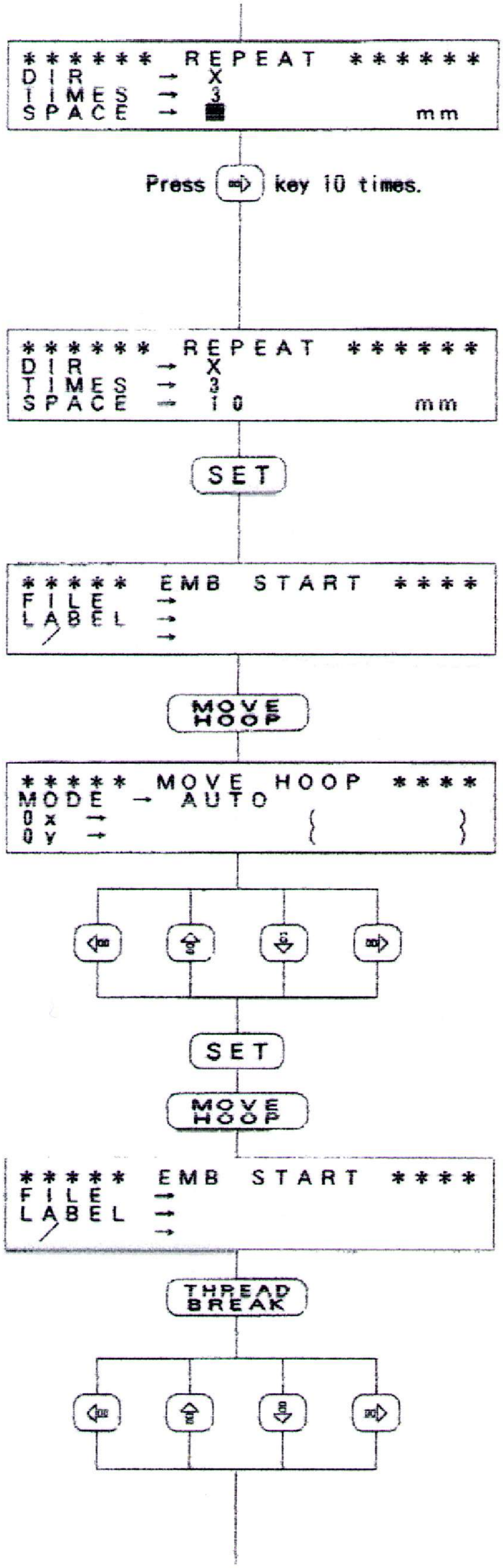
30. Operate ⇧ and ⇩ keys to locate the cursor at the DIR line.

31. Set the type parameter to X using the ⇦ or ⇨ key.

32. Press the ⇩ key. (The flashing cursor moves to the SPACE line.)

33. Press the ⇨ key three times to enter the repeating number.

34. Press the ⇩ key. (The flashing cursor moves to the SPACE line.)



Press ⇨ key 10 times.
SET
MOVE HOOP
⇦
⇧
⇩
⇨
SET
MOVE HOOP
THREAD BREAK
⇦
⇧
⇩
⇨

```
******  REPEAT  ******
DIR    →  X
TIMES  →  3
SPACE  →  █          mm
```

```
******  REPEAT  ******
DIR    →  X
TIMES  →  3
SPACE  →  10         mm
```

```
*****  EMB  START  ****
FILE   →
LABEL  →
       →
```

```
*****  MOVE  HOOP  ****
MODE  →  AUTO
0x  →            {        }
0y  →
```

```
*****  EMB  START  ****
FILE   →
LABEL  →
       →
```

35. Press the ⇨ key 10 times to enter the interval between patterns. (Holding the key down scrolls the value continuously.)

36. Press SET key.

37. Press MOVE HOOP key.

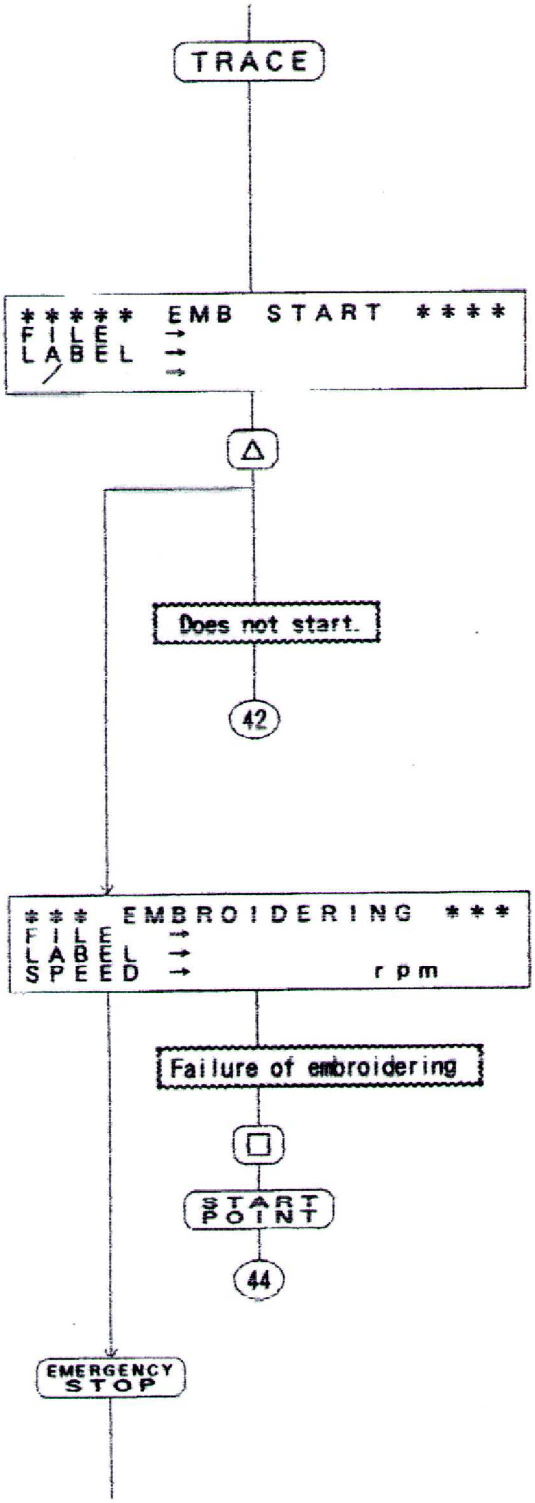
38. Move the hoop to the save point using ⇦, ⇧, ⇩ and ⇨ keys.

39. Press SET key.

40. Press MOVE HOOP key.

41. Check that the thread breakage LED is on. (If not, press the THREAD BREAK key.)

42. Determine the starting point of the embroidery hoop using ⇦, ⇧, ⇩ and ⇨ keys.


TRACE
***** EMB START ****
FILE →
LABEL →
/ →
△
Does not start.
42
*** EMBROIDERING ***
FILE →
LABEL →
SPEED → rpm
Failure of embroidering
□
START POINT
44
EMERGENCY STOP

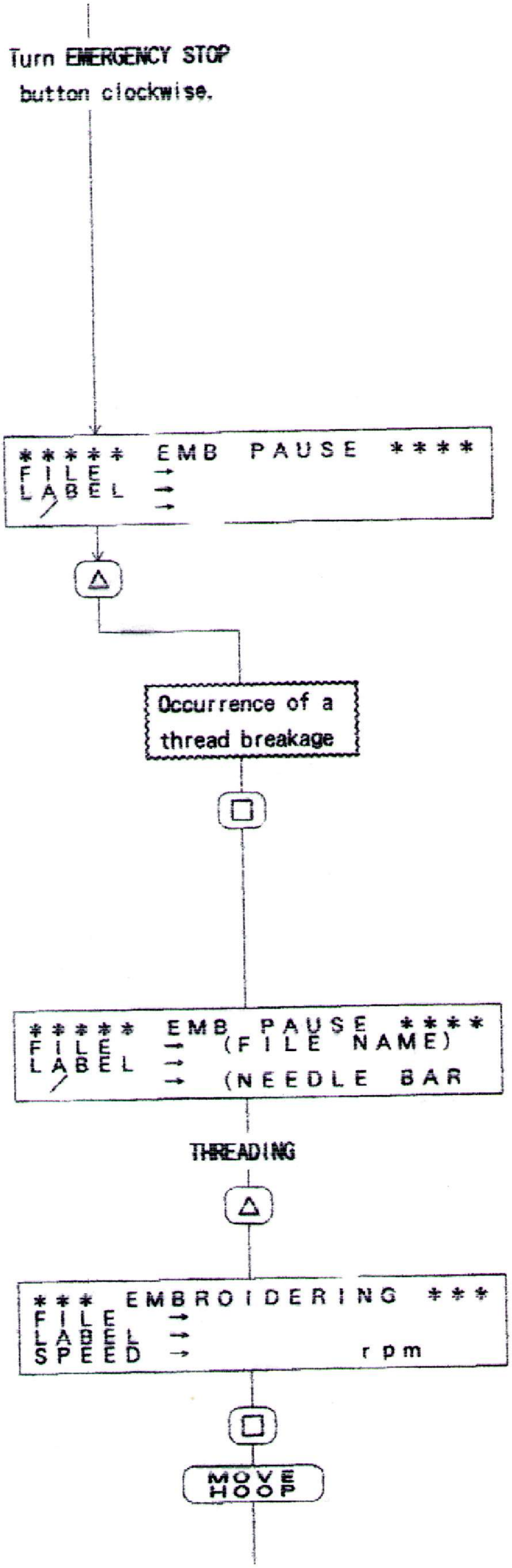
43. Press TRACE key and check the embroidery data position. (Return to step 42 to re-adjust the position. If an error occurs, press STOP (□) key.

44. Press START (△) key. An embroidery cycle is initiated.

45. If an embroidery cycle does not start, the interference function is activated indicating that the data exceeds the hoop size. Repeat the procedure from step 42 to change the starting point.

46. To re-start embroidering since an embroidering cycle results in a failure, press □ key followed by START POINT key and then repeat the procedures from step 38.

47. Pressing EMERGENCY STOP button immediately stops the embroidering operation and an alarm will be activated.


Turn EMERGENCY STOP button clockwise.
***** EMB PAUSE ****
FILE →
LABEL →
/ →
△
Occurrence of a thread breakage
☐
***** EMB PAUSE ****
FILE → (FILE NAME)
LABEL →
/ → (NEEDLE BAR
THREADING
△
*** EMBROIDERING ***
FILE →
LABEL →
SPEED → rpm
☐
MOVE HOOP

48. Turn the (EMERGENCY STOP) button clockwise to clear the emergency stop mode.

NOTE: When embroidering is halted by pressing the (EMERGENCY STOP) button, the stop position will slightly deviated. In this case, correct the position using the (⇧) (⇩) (⇦) (⇨) keys.

49. Press START (△) key to re-start the operation.

50. Press STOP (☐) key when a thread breakage occurs.

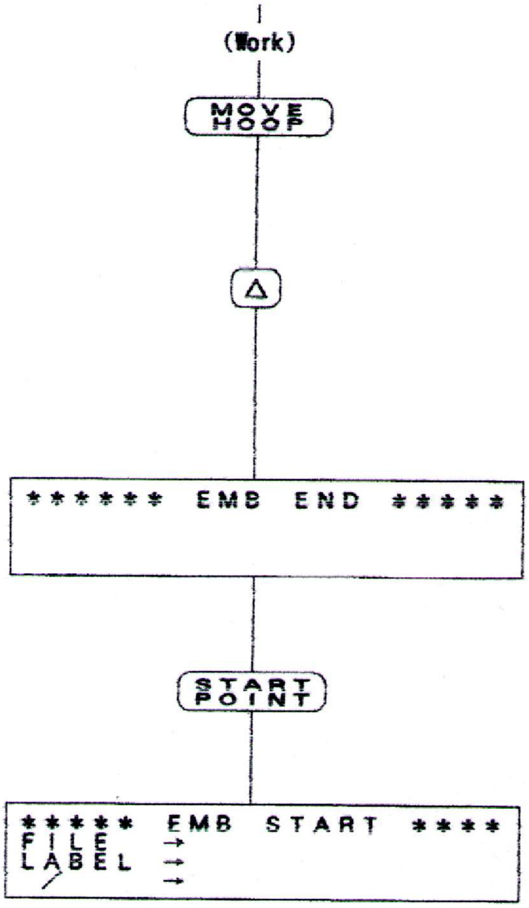
51. Return the hoop to the position where upper thread breakage occurred using the (▽) key.

52. THREADING

53. Press START (△) key to re-start the operation.

54. Press STOP (☐) key.

55. Press (MOVE HOOP) key. (The hoop moves to the pre-set position.)



```
****** EMB END *****
```

```
***** EMB START ****
FILE  →
LABEL →
 /    →
```

(56. Work relating to the hoop can be conducted.)

57. Press (MOVE HOOP) key. (The hoop returns to the position where before pressing (MOVE HOOP) key in step 54.)

58. Press START ((△)) key to re-start the operation.

59. The message shown on the left appears upon completion of an operation cycle.

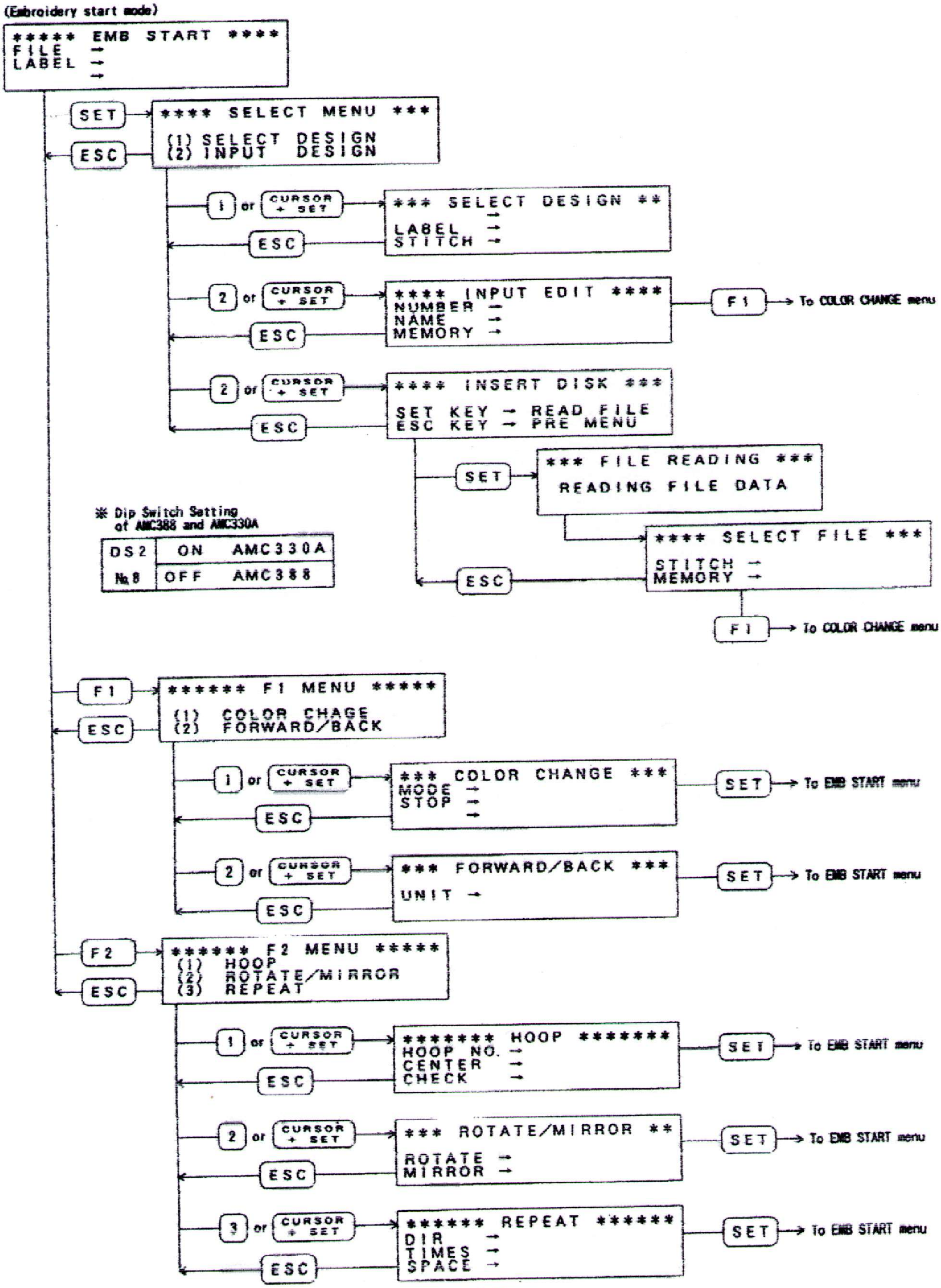
60. Press (START POINT) key and the embroidery machine is ready for re-start.

Error Messages and Contents

Error message	Content
EMERGENCY STOP	EMERGNECY STOP button is pressed.
SEWING MOTOR LOCK	Motor of embroidery machine is locked.
X MOTOR LOCK	X motor is locked.
Y MOTOR LOCK	Y motor is locked.
BAD NEEDLE POSITION	Needle bar position is abnormal.
THREAD BREAK	Occurrence of upper or bobbin thread breakage.
RAM CHECK ERROR	RAM is abnormal.
RS232C COM ERROR	Communication failure between embroidery machine AD830 and editing system or disk reader.
INTERNAL COM ERROR	Communication failure in embroidery machine AD830.
RS232C CONNECT ERROR	Poor electrical connection between embroidery machine AD830 and editing system or disk reader.
INTERNAL CONNECT ERROR	Poor electrical connection in embroidery machine AD830.
TRIMING ERROR	Motor locking due to thread trimming failure.
THERMAL ERROR	Excessively high internal temperature of embroidery machine.
LIMIT ERROR	X-Y hoop stops exceeding the limit range.
BAD START POSITION	This message is displayed when the design is too great for the specified frame when the START key is pressed, with the frame interference preventing function set to ON.

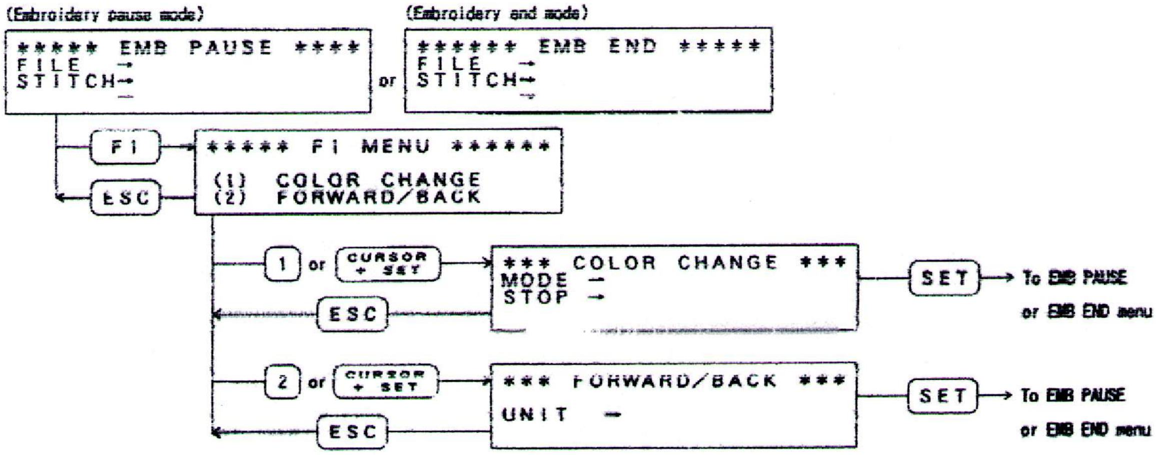
AD830 Operation Flow Chart

(Embroidery start mode)


***** EMB START ****
FILE →
LABEL →
→
SET
ESC
**** SELECT MENU ***
(1) SELECT DESIGN
(2) INPUT DESIGN
1 or CURSOR + SET
ESC
*** SELECT DESIGN **
→
LABEL →
STITCH →
2 or CURSOR + SET
ESC
**** INPUT EDIT ****
NUMBER →
NAME →
MEMORY →
F1
To COLOR CHANGE menu
2 or CURSOR + SET
ESC
**** INSERT DISK ***
SET KEY → READ FILE
ESC KEY → PRE MENU
SET
*** FILE READING ***
READING FILE DATA
**** SELECT FILE ***
STITCH →
MEMORY →
ESC
F1
To COLOR CHANGE menu
F1
ESC
****** F1 MENU *****
(1) COLOR CHAGE
(2) FORWARD/BACK
1 or CURSOR + SET
ESC
*** COLOR CHANGE ***
MODE →
STOP →
→
SET
To EMB START menu
2 or CURSOR + SET
ESC
*** FORWARD/BACK ***
UNIT →
SET
To EMB START menu
F2
ESC
****** F2 MENU *****
(1) HOOP
(2) ROTATE/MIRROR
(3) REPEAT
1 or CURSOR + SET
ESC
******* HOOP *******
HOOP NO. →
CENTER →
CHECK →
SET
To EMB START menu
2 or CURSOR + SET
ESC
*** ROTATE/MIRROR **
ROTATE →
MIRROR →
SET
To EMB START menu
3 or CURSOR + SET
ESC
****** REPEAT ******
DIR →
TIMES →
SPACE →
SET
To EMB START menu

※ Dip Switch Setting of AMC388 and AMC330A

DS2	ON	AMC330A
No.8	OFF	AMC388


(Embroidery pause mode)
***** EMB PAUSE ****
FILE →
STITCH→
or
(Embroidery end mode)
****** EMB END *****
FILE →
STITCH→
F1
ESC
***** F1 MENU ******
(1) COLOR CHANGE
(2) FORWARD/BACK
1
or
CURSOR + SET
ESC
*** COLOR CHANGE ***
MODE →
STOP →
SET
To EMB PAUSE or EMB END menu
2
or
CURSOR + SET
ESC
*** FORWARD/BACK ***
UNIT →
SET
To EMB PAUSE or EMB END menu

[MEMO]

[MEMO]

[MEMO]

8. MAINTENANCE

1) Cleaning

As waste thread and dust tend to build up in the needle thread passages and shuttle periphery, clean at regular intervals.

NOTE: Always turn off power of the power supply box before beginning cleaning.

- To clean the shuttle periphery ①, remove needle plate ② and wipe the shuttle periphery with a soft cloth (Fig. 8.1 and 8.2). A vacuum cleaner provides excellent results in dust removal. (interval: every two days)
- To clean the areas around moving ③ and stationary ④ blades, remove the needle plate and wipe the areas with a soft cloth (Fig. 8.1 and 8.2). A vacuum cleaner is an effective mean to remove dust. (interval: once a week)

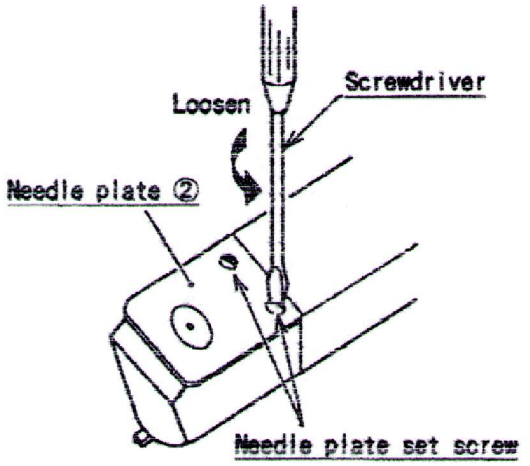

Screwdriver
Loosen
Needle plate ②
Needle plate set screw

Fig. 8.1 Removing the needle plate

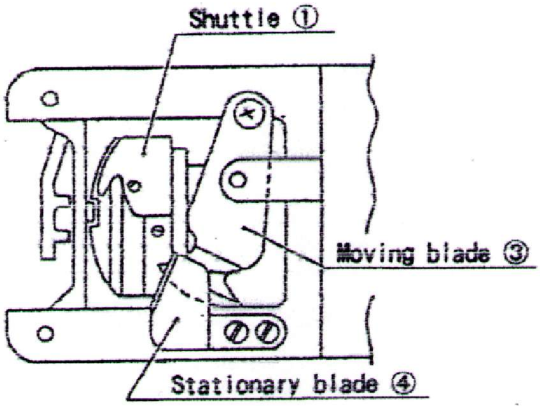
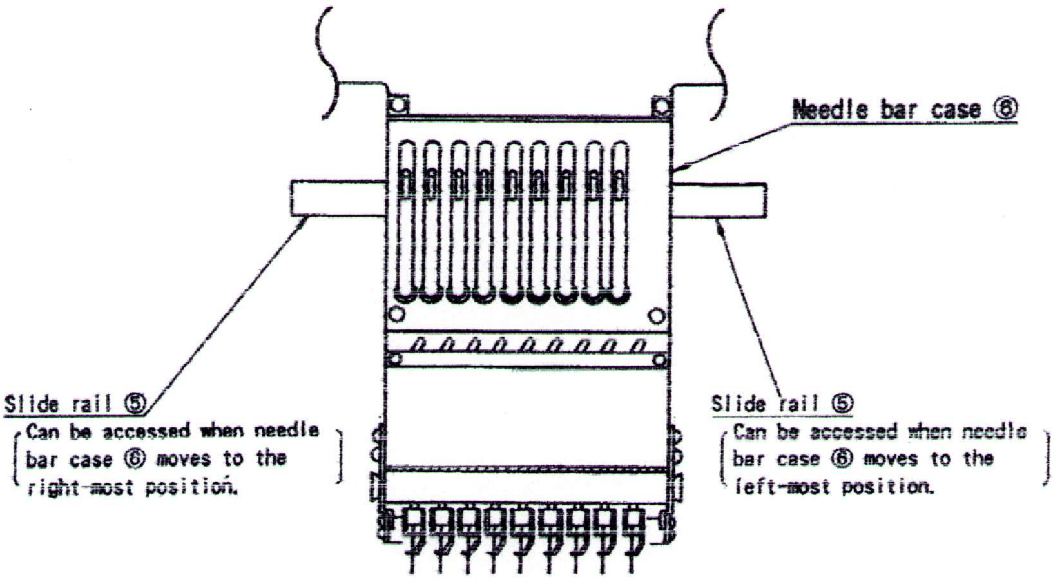

Shuttle ①
Moving blade ③
Stationary blade ④

Fig. 8.2 After removal of the needle plate

- Check the areas around needle bar case slide rail ⑤ for waste thread and dust. Clean as needed. (Interval: every day)


Needle bar case ⑥
Slide rail ⑤
Slide rail ⑤

(Can be accessed when needle bar case ⑥ moves to the right-most position.)

(Can be accessed when needle bar case ⑥ moves to the left-most position.)

Fig. 8.3

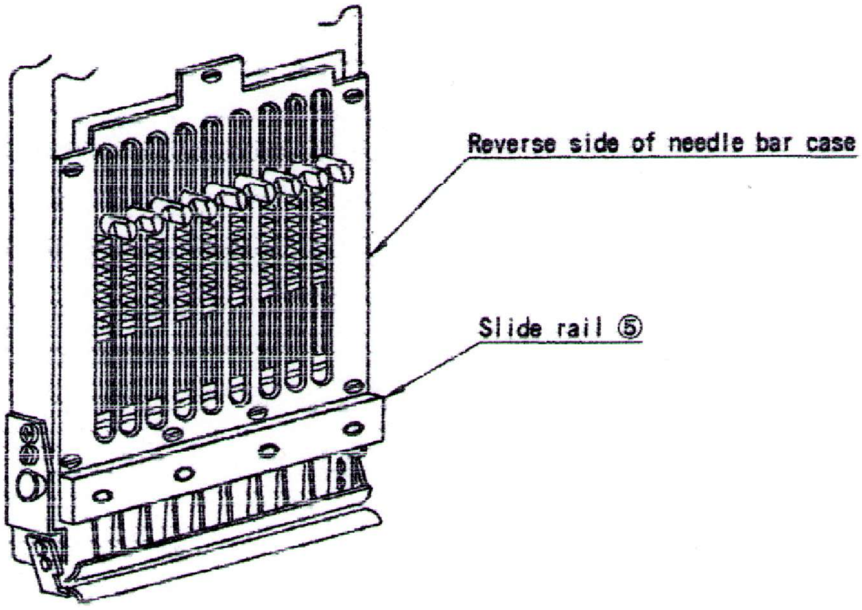

Reverse side of needle bar case
Slide rail ⑤

Fig. 8.4

2) Lubrication

Lubrication is important for maintaining the machine performance over an extended period of time. For daily use, apply one or two drops of oil to each port (be careful not to apply too much oil).

(1) For the arm bed, apply oil to the red oil ports indicated by the arrows in Fig. 8.6.

(2) For the shuttle, apply oil to the port indicated by the arrow in Fig. 8.7.

(3) For the needle bar case, apply oil thoroughly to the red oil ports one the front and reverse sides indicated by the arrows in Fig. 8.8.

(4) Apply oil to the needle bar case rail portion as indicated by the arrows in Fig. 8.9.

NOTES:

(1) Be careful not to apply excessive oil since it will result in dirty finished fabrics.

(2) Only use the sewing machine spindle oil provided.

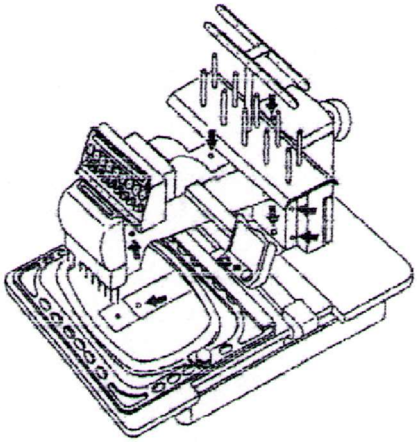


Fig. 8.5

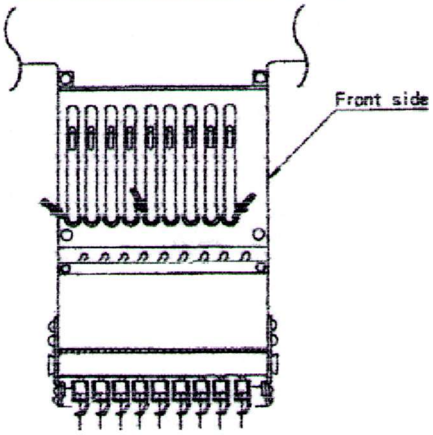


Fig. 8.6

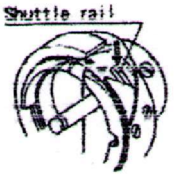


Fig. 8.7

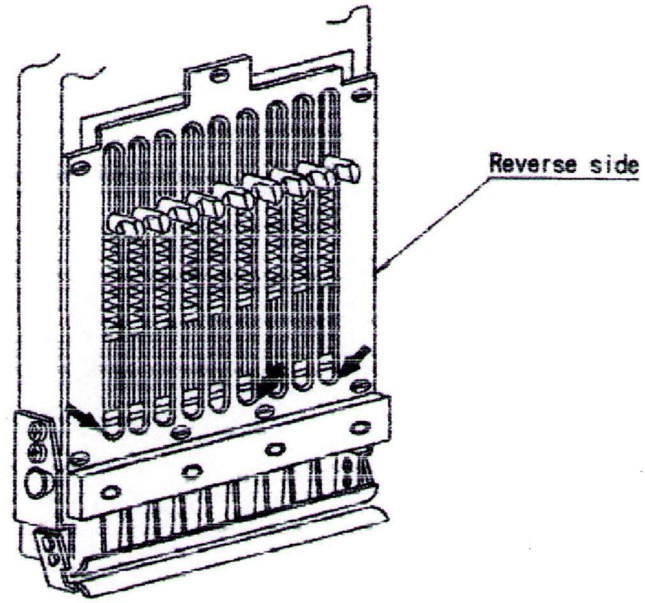

Reverse side

Fig. 8.8

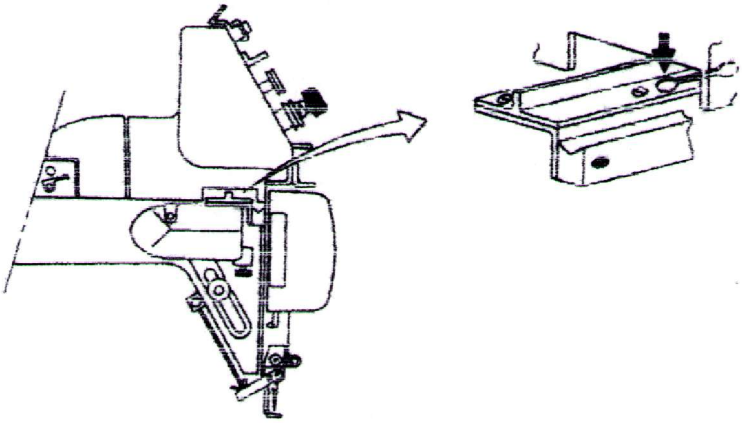


Fig. 8.9

9. TROUBLESHOOTING

1) Error Messages and Action

When the following error messages appear on the operation box display, the embroidery machine shuts down. At the same time, the corresponding LED comes on and the buzzer sounds. In this case, press the emergency stop switch, then take the following action.

No.	Error message	Problem	Cause	Action	Reference page
1	EMERGENCY STOP	indicated when the EMERGENCY STOP button is pressed.	――――	――――	—
2	SEWING MOTOR LOCK	Sewing motor locking	(1) The thread gets entangled in the shuttle.	• Remove the thread from the shuttle.	P. 91
			(2) Lubricating oil has run out.	• Apply oil to each oil port.	P. 93, P. 94
			(3) The embroidery hoop interferes with the needle and it fails to move.	• Check if the pattern size matches the embroidery hoop size.	P. 105
				• Readjust the original point on the patter.	P. 28
			(4) The needle has come into contact with a button or other hard object and it fails to move.	• Change the embroidery position or remove the hard object.	—
			NOTE: For causes (3) and (4), check if the needle is bent or has a rounded tip. If so, replace the needle.		P. 23
3	X MOTOR LOCK	X-motor locking (horizontal direction)	(1) The embroidery hoop holder has reached the right or left edge.	• Readjust the original point of the pattern.	P. 28
			(2) The material is hooked on the table corner or other portion, the embroidery hoop fails to move at all.	• Unhook the material and start embroidering from the beginning.	—
			(3) The embroidery hoop has collided with the wall or other portion, it fails to move at all.	• Remove the objects interfering with the embroidery hoop movement and start embroidering from the beginning.	—

No.	Error message	Problem	Cause	Action	Reference page
4	**Y MOTOR LOCK**	Y-motor locking (vertical direction)	(1) The embroidery hoop holder has reached the front or rear end. (2) The material is hooked on the table corner or other portion, the embroidery hoop fails to move at all. (3) The embroidery hoop has collided with the wall or other portion, it fails to move at all.	● Readjust the original point on the pattern. ● Unhook the material and start embroidering from the beginning. ● Remove the objects interfering with the embroidery hoop movement and start embroidering from the beginning.	P. 28 — —
5	**BAD NEEDLE POSITION**	Needle position error	(1) Foreign matter is caught between the needle bar change-over gears or the needle bar case is interfered by other parts.	● Turn the power switch off and remove the foreign matter. Manually move the needle bar case until the needle aligns with the needle plate hole. ● Turn the power switch on. Using the **MANUAL NEEDLE BAR SELECTOR** key, check that the needle bar is switched properly.	— —
6	**A THREAD BREAKS**	Thread breakage	(1) The needle thread is broken. (2) Although the needle thread is not broken, the thread breakage sensor is activated, the embroidery machine to stop.	● Route the needle thread properly. ● Eliminate the cause of needle thread breakage. ● Route the upper thread properly.	P. 16, P. 17 P. 98 P. 16, P. 17
7	**RS232C COM ERROR**	Communication error	(1) The editing system is not in the embroidery machine output condition.	● Set the editing system to the embroidery machine output condition. (For details, refer to the AMC380 Instruction Manual.)	—

No.	Error message	Problem	Cause	Action	Reference page
8	RS232C CONNECT ERROR	Communication error	(1) The transfer cable is disconnected.	• Connect the editing system to the embroidery machine using the cable.	P.15
9	TRIMMING ERROR	Trimming error	(1) The thread gets entangled in the shuttle. (2) The thread is too heavy.	• Remove the thread from the shuttle. • Cut the thread by pressing the TRIMMING key or with a scissors.	P.91 P.10
10	RAM check error	Memory check error	(1) Abnormality in memory.	• Contact the dealers.	
11	internal communication error	internal communication error	(1) Abnormal communication of embroidery machine (AD833).	• Contact the dealers if this error should occur frequently.	
12	internal connection error	internal connection error	(1) Disconnection of embroidery machine (AD833).	• Check the connection between the operating box and the main substrate.	—
13	Temperature rise error	Temperature rise error	(1) Temperature inside the embroidery machine AD833 exceeds the limit.	• Turn the power supply OFF for half an hour and longer.	—
14	Limit error	Limit error	(1) Embroidery hoop exceeds the limit of either X or Y direction.	• Align the pattern origin.	P.28
15	BAD START POSITION	Start position error	(1) Displayed when the design to too large for the specified frame when the START key is pressed with the frame interference preventing function set to ON.	• Either change the frame NO. or set the frame interference preventing function to OFF.	P.105
16	NUMBER ERROR	Design No. error	(1) The design No. specified for embroidery data reading from the embroidery machine is wrong.	• Specify the correct design No.	—

No.	Error message	Problem	Cause	Action	Reference page
17	NO DISK	Disk not mounted	(1) No disk is mounted on the disk drive when reading the embroidery data from AMC330.	• Insert the disk in the disk drive.	—
18	DISK READING ERROR	Failure in reading from disk	(1) The inserted disk cannot be read when reading the embroidery data from AMC330.	• Insert a Toyota, Tajima or ZSK disk in 2DD format correctly in the disk drive. The disk or the disk drive may be broken.	—
19	DISK SELECTION ERROR	Disk selection error	(1) The inserted disk format is different from disk selection data on AMC330 when reading embroidery data from AMC330.	• Correct the disk selection data on AMC330 to match the format of the inserted disk.	—
20	FILE NOT FOUND	The specified file is not found.	(1) The desired data does not exist in the inserted disk when reading the embroidery data from AMC330.	• Write the desired file through the editor on the disk.	—

2) Troubleshooting

Symptom	Cause	Action	Reference page
(1) Needle thread breaks.	① The thread is not routed correctly.	• Route the thread correctly.	P. 16, P. 17
	② The thread is entangled.	• Unravel the thread.	—
	③ The needle thread is too tight.	• Adjust the thread tension properly.	P. 26
	④ The bobbin thread is too tight.	• Adjust the thread tension properly.	P. 20
	⑤ The needle is not installed properly.	• Reinstall the needle properly.	P. 23
	⑥ The thread is too thick for the needle hole.	• Use the correct thread.	P. 24
	⑦ The shuttle is scratched.	• Polish the shuttle by emery paper or replace.	P. 91
	⑧ The fabric, thread and needle combination is incorrect.	• Use the correct combination.	P. 24
(2) Stitch skipping occurs.	① The needle is not installed properly.	• Reinstall the needle correctly.	P. 23
	② The needle is bent or has a rounded tip.	• Replace the needle.	P. 23
	③ The combination of fabric, thread and needle is incorrect.	• Use the correct combination of fabric, thread and needle.	P. 24
	④ The thread is not routed correctly.	• Route the thread correctly.	P. 16, P. 17
(3) The needle breaks.	① The needle is not mounted correctly.	• Reinstall the needle correctly.	P. 23
	② The needle is bent or has a rounded tip.	• Replace the needle.	P. 23
	③ The needle is too thin for the fabric and thread.	• Use the correct needle.	P. 24
	④ The needle interferes with the bobbin case.	• Reinstall the bobbin case correctly.	—
	⑤ The needle interferes with the shuttle.	• Adjust the gap between the needle and shuttle.	—
(4) Thread loops on the stitch	① The needle thread is too slack.	• Adjust the needle thread tension prope. ly.	P. 26
	② The bobbin thread is too tight.	• Adjust the bobbin thread tension properly.	P. 20

Symptom	Cause	Action	Reference page
(5) The material puckers up.	① The needle and bobbin threads are too tight. ② the thread thickness and needle are a mismatch for the fabric. ③ The material set on the embroidery hoop is too loose.	• Slacken the needle and bobbin threads. • Use the correct thread and needle. • Hoop the material properly.	P. 20, P. 26 P. 24 P. 20
(6) Embroidery machine fails to operate.	① The AC power cord is not inserted properly. ② The DC power cord is not inserted properly. ③ The thread is entangled in the shuttle.	• Turn the power switch off and insert the cord all the way in. • Remove the thread from the shuttle.	P. 15 P. 91
(7) Abnormal noise	① Lubricating oil has run out. ② Waste thread or dust has built up in the shuttle.	• Apply oil. • Clean the shuttle.	P. 93, P. 94 P. 91
(8) Thread comes free at the beginning of sewing.	① The margin needle thread is too short.	• Adjust the margin length using the picker selector switch.	P. 27
(9) Although the needle thread is not broken, the thread breakage sensor is activated, causing the embroidery machine to shut down.	① the bobbin thread has run out. ② The bobbin thread becomes entangled. ③ The needle thread is too slack. ④ The thread is not routed properly.	• Replace the bobbin thread. • Set the bobbin in the bobbin case properly. • Adjust the needle thread tension properly. • Route the thread properly.	P. 23 P. 20 P. 26 P. 16, P. 17
(10) Bobbin thread breaks.	① The bobbin case tension spring force is too strong. ② The thread is not routed through the bobbin case correctly.	• Loosen the tension spring set screw and adjust the tension. • Route the thread correctly.	P. 20 P. 20

10. ACCESSORIES AND OPTIONS

Accessories provided with the embroidery machine are as listed below.

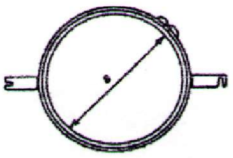
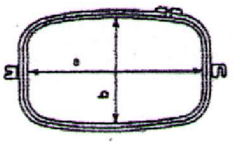
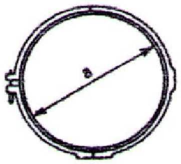
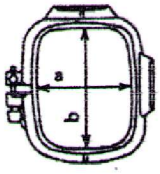
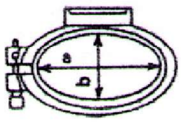
No.	Accessory	Quantity
1	Accessory box	1
2	Oil feeder	1
3	Embroidery lace needle DBxK5 No.11	10
4	Screwdriver (LL)	1
5	Screwdriver (L)	1
6	Screwdriver (S)	1
7	Bobbin	2
9	Embroider hoop (250 mm dia): Set screw type	1
11	Scissors	1
12	Screwdriver	1
15	Embroidery hoop holder (370)	1
16	AC power cord	1
17	DC power cord	1
18	Transfer cable	1
19	Instruction manual	1
20	Tweezers	1
21	2mm box wrench	1
22	3mm box wrench	1
23	Magnet holder	1

Options:

The following options are available to extend the range of embroidery work. They can be ordered as required from the dealer from which the embroidery machine was purchased.

- Embroidery needle: DB-K23 No.11
- Embroidery hoop : See Embroidery hoop types table on the preceding page.
- Embroidery data : A wide range of designs are available including Kanji, alphabets and patterns.
- Editing system, paper tape reader, paper tape punching unit, disk reader, multiplexer, transfer cable, cap hoop, digitizer, boring unit, code embroidery unit, additional memory (for approx. 160,000 needles), extension table, light marker.

Embroidery hoop types

	No.	Item	Part No.	Schematic drawing	a × b	Remarks
Set screw type	1	Embroidery hoop set (250)	2161048-250		ϕ240 mm	Standard
	2	Embroidery hoop set (150)	2161008-250		ϕ140 mm	Option
	3	Embroidery hoop set (180)	2161018-250		ϕ170 mm	Option
	4	Embroidery hoop set (210)	2161028-250		ϕ200 mm	Option
	5	Embroidery hoop set (240 square)	2161038-250		240 mm×240 mm	Option
	6	Embroidery hoop set (300×200)	2161058-250		308 mm×196 mm	Option
	7	Embroidery hoop set (300×240)	2161068-250		309 mm×236 mm	Option
*	8	Embroidery hoop set (450×270)	2161078-250		445 mm×240 mm	Option
*	9	Embroidery hoop set (450×290)	2161088-250		445 mm×290 mm	Option
Magnet type	10	Embroidery hoop set (70)	2160118-250		ϕ 70 mm	Option
	11	Embroidery hoop set (90)	2160128-250		ϕ 90 mm	Option
	12	Embroidery hoop set (120)	2160138-250		ϕ120 mm	Option
	13	Embroidery hoop set (70×100)	2160128-205		70 mm×100 mm	Option
	14	Embroidery hoop set (100×70)	2160128-205		100 mm× 70 mm	Option
	15	Embroidery hoop set (90×120)	2160138-205		90 mm×120 mm	Option
	16	Embroidery hoop set (120×90)	2160138-205		120 mm× 90 mm	Option
	17	Embroidery hoop set (120×150)	2160148-205		120 mm×150 mm	Option
	18	Embroidery hoop set (150×120)	2160148-205		150 mm×120 mm	Option
	19	Embroidery hoop set (49×80 oval)	2160108-205		49 mm× 80 mm	Option
	20	Embroidery hoop set (80×49 oval)	2160118-205		80 mm× 49 mm	Option

The large-sized embroidery hoop is also available (part No.:2161828-408).

The bag frame and frame holder are also provided.

NOTE: For the asterisk marked embroidery hoop sets (450×270, 450×290), the optional embroidery hoop holder (550-2) is needed (part No.: 2161818-408).

11. SETUP CHANGE

(1) Turn off the machine power.

(2) Remove the upper two screws from the cover located at the bottom rear of the machine and take off the cover, as shown in fig. 11.1.

(3) Disconnect the four connectors. Unscrew two screws and pull out the board. (Fig. 11.2)

NOTE: When connecting the 40P flat cable connector, check the presence of coding.

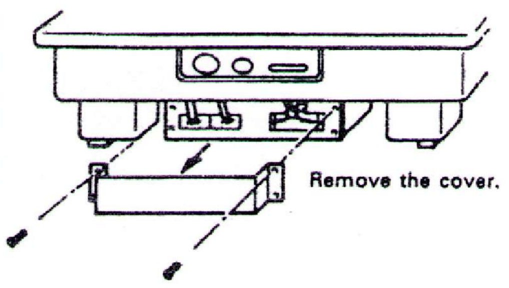
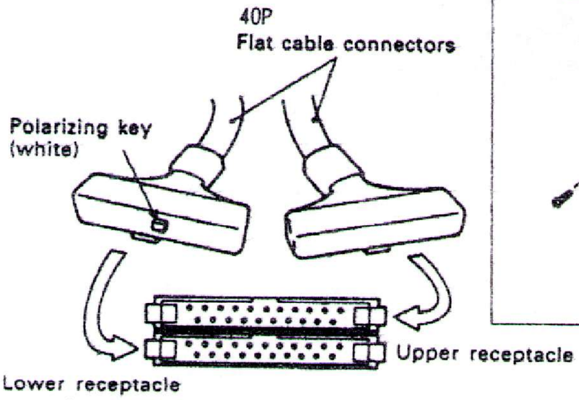

Remove the cover.

Fig. 11.1


40P
Flat cable connectors
Polarizing key
(white)
Upper receptacle
Lower receptacle

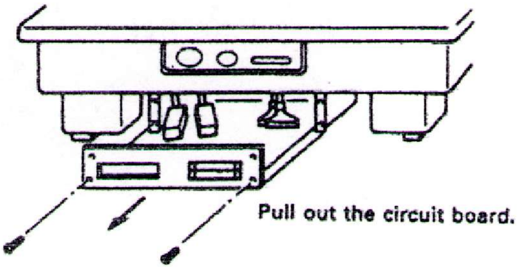
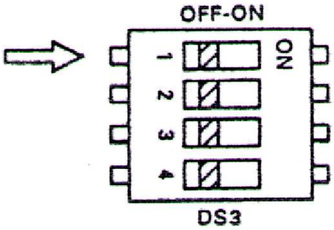

Pull out the circuit board.

Fig. 11.2

DS3 setting (Fig. 11.3)

XY limit detection selector DS3-1 (Fig. 11.3)



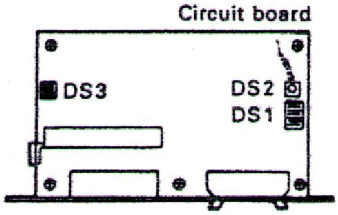


Fig. 11.3

DS3-1 ON-OFF	Function	Embroidering rang (Maximum)
OFF	Limit detection valid	288(L)×448(W)mm (11.3(L)×17.6(W)inch)
ON	Limit detection invalid	297(L)×457(W)mm (11.7(L)×18(W)inch)

NOTE: OFF at shipment (valid)

[Caution 1] When reinstalling the circuit board, connect the four connectors correctly and firmly.

[Caution 2] The DS1 and DS2 is reserved.

12. GLOSSARY

*1: Editing system AMC388

Enlargement, reduction, inversion, modification or correction of thread density and combination of embroidery data (patterns) can be carried out.

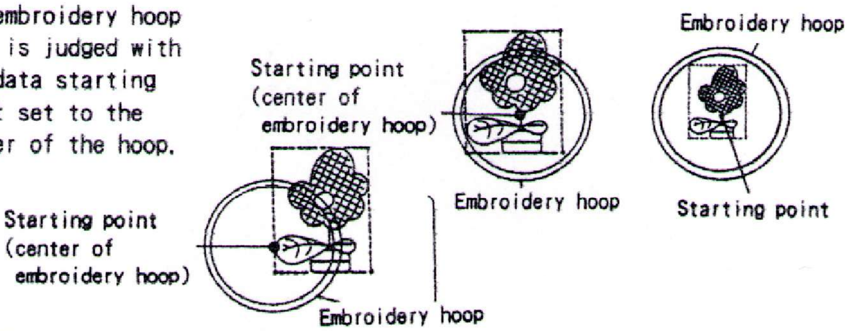
*2: Design system AMC382

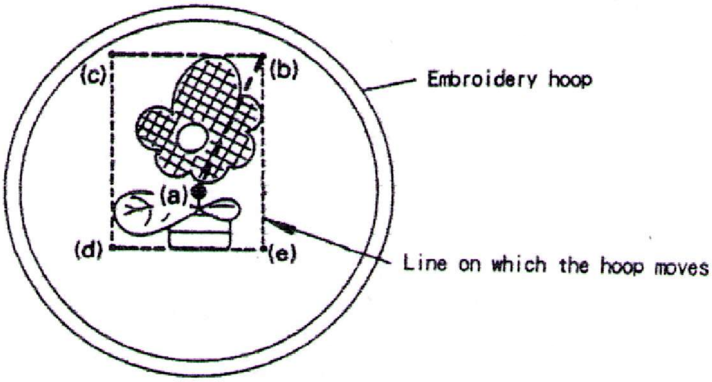
In addition to functions of the editing system, embroidery data (patterns) can be created.

*3: Disk reader AMC330

Embroidery data (patterns) can be transmitted from floppy disk storing embroidery data of Toyota, Tajima or ZSK format to the embroidery machine AD830.

*4: Centering and embroidery hoop interference check functions

Item	Content
(1) Selection of embroider hoop size	***** Hoop Setting ****** Hoop No. → Centering → Interference → (1) A hoop number is entered to the embroidery hoop number column. (2) When the embroidery data is larger than the embroidery hoop size, buzzer is activated twice. When the embroidery data is smaller than the embroidery hoop size, embroidering can be initiated after specifying a needle No. The embroidery hoop size is judged with the data starting point set to the center of the hoop.  Embroidery hoop Starting point (center of embroidery hoop) Embroidery hoop Starting point Starting point (center of embroidery hoop) Embroidery hoop
(2) Hoop center shift	The embroidery hoop moves so that the data starting point is at the center of the hoop at the beginning of sewing.

Item	Content
(3) Embroidery data size check	When the trace key on the operating box is pressed, the embroidery hoop moves along the rectangular surrounding the embroidery data and stops at the starting point (the hoop moves (a), (b), (c), (d) and (e) and then stops at (a)).  (c) (b) Embroidery hoop (a) (d) (e) Line on which the hoop moves

*5: Cap embroidering

This function is used for embroidering baseball caps, enabling embroidering on a circular arc.

*6: Code embroidering

With this function, embroidering with code or loop sewing can be performed.

*7: Boring embroidering

With this function, boring embroidering can be performed.

*8: Limit detection valid

The embroidery hoop is controlled so that it stops a few millimeters before reaching the right-to-left or front-to-rear limit by means of the software. It is possible to clear the software limit. Cf. page 103.

*9: Thread breakage detection

- Needle thread breakage detection

  Breakage of the needle thread is detected within 3 stitches for a stitching pitch of 3 mm or more or within 9/P (P: pitch length) for a stitching of below 3 mm upon occurrence of a thread breakage. Upon detection of a thread breakage, the embroidery machine halts its operation. No thread breakage will be detected for the first ten stitches after the stitching starts.

- Bobbin thread breakage detection

  A bobbin thread breakage is detected within 20 stitches upon occurrence of a thread break and the embroidery machine halts its operation. The number of stitches before detection of thread breakage may exceed 20 according to embroidery data. No thread breakage will be detected for the first ten stitches after the stitching starts.